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THE LIFE AND WORKS OF VYĀSARĀYA SVĀMIN†

(1478–1539)

By B. N. KRISHNAMURTI SARMA

Vyāsatīrtha, Vyāsarāya or Vyāsarāya Svāmin, as he is variously called, has been mentioned as a disciple of Brahmanya Tīrtha. Chronologically after Jayatīrtha, he is the one outstanding personality among Vaiṣṇava Pontiffs of the school of Madhvācārya. The Vaiṣṇavism of Madhva had patronage in the courts of Kalinga, of Tulunāḍ and in the Ānegondi of Pre-Vidyāraṇya days, but the influence attained by Vyāsarāya at the court of Vijayanagar, eclipsed all earlier and later records, and stands by itself unique in history. It is thus briefly indicated in Vādirāja's *Tīrthaprabandha* :—

राजधानी जयति सा गजगह्वरसंज्ञिता ।

यत्र भान्ति गजा माध्वराद्धान्तधरणीधराः ॥ (III. 17)

Till the publication of the *Vyāsayogicarita*, the world had no idea of the art played by Vyāsarāya, in the history of Vijayanagar Empire.¹ Some of the older generation of scholars of S. Indian history were inclined to laugh at what they imagined to be an exaggerated estimate of him given by Mādhva tradition and dismiss it as a pious fabrication. But it is no longer possible to refuse to be convinced. The contemporary biography of Vyāsarāya² is before them and its account is in the main corroborated by such literary and epigraphic evidences as we are yet lucky to possess. Thanks to these, Vyāsarāya is and need no longer be a shadowy figure depending for his greatness upon the pious credulity and propaganda of his followers.

LIFE.

The most complete and reliable account of the life and career

1. It is a great pity that no proper account of the life and achievements of Vyāsarāya has appeared even in the Vijayanagar Sexcentenary Commemorative Volume.

2. The *Vyāsayogicarita* of Somanātha Kavi, a Campu Kāvya, in 8 ullāsas, with elaborate English Introdn. and Notes, by B. Venkoba Rau, Bangalore Press, Bangalore, 1926.

of Vyāsarāya is to be found in the biographical account of Somanātha.³ The songs of Purandara Dāsa, a few inscriptions, and tradition, yield important particulars. We shall now sketch the life of Vyāsarāya, in the light of these sources :—

Vyāsarāya was born in or about 1460 A.D. in the village of Bannūr,⁴ about six miles to the north of Sosale, in the Mysore District. His father Ballaṇṇa Sumati of Kaśyapagotra was the youngest of the six sons of Rāmācārya. Being childless for long, he married a second wife Akkamma. By the blessings of Brahmanya Tīrtha of Cannapatna, he had three children born to him—a girl and two boys. The youngest was Yatirāja—the future Vyāsarāya. At the age of five, Yatirāja was taught the alphabet, and at seven he had his upanayana. Then four years he was at his Gurukula, whence he went home at the age of eleven. There he underwent a complete course of studies in Kāvya, Nāṭaka, Alaṅkāra and Grammar which must have covered at least a period four years.

Somewhere about this time, Brahmanya Tīrtha sent word claiming from Ballaṇṇa Sumati the fulfilment of a promise made by him and his wife before the birth of their children that they would make over their second son to him. After some hesitation on the part of the parents, the promise was duly fulfilled. Ballaṇṇa Sumati himself took his son to Channapatna, and presented him to Brahmanya and returned home.

Brahmanya Tīrtha was very much impressed with the superior attainments of his ward and was secretly meditating to ordain him a monk so as to enlist his genius to the cause of Vaiṣṇava Dharma. Somanātha says that the young Yatirāja divined the intention of Brahmanya and not being willing to commit himself made a bolt for his freedom, one day. He walked a long way off and feeling tired lay down to rest under a tree. While asleep he had a beatific vision in his dream in which God Viṣṇu appeared before him and instructed him in his duty. And the boy returned to the hermitage of Brahmanya. The incident is of importance as throwing some light on the probable age of Yatirāja at the time. He could not have been more than sixteen, to judge from the use of the phrase *śaiśavacāpalena* in the text of the *Vyāsayogicarita*. Not long after this incident, Brah-

3. It is not therefore very clear what is meant by the statement in the *Madras University Historical Series, XI* that “no authentic information is available re. the early life and career of Vyāsa” (p. 322). Nothing has so far been discovered belying the facts narrated by Somanātha !

4. *Vyāsayogicarita*, p. 13. (Text).

maṇya Tīrtha ordained his ward a monk and gave him the name of Vyāsātīrtha.

Vyāsātīrtha seems to have spent some time after his ordination in the company of his Guru. Some time after the great famine of 1475-76, Brahmaṇya Tīrtha died. We may therefore assume that Vyāsātīrtha came to the Pīṭha in or about the year 1478 A.D. Assuming that he was about 18 years old at the time of the demise of his Guru, we may easily fix the date of his birth in or about 1460 A.D.

It is obvious that V. had no time to study anything of Madhva-śāstra under Brahmaṇya. He was obliged soon after his assumption of the Pīṭha to go to Kāñcī, where he is said to have stayed for many years studying the six systems of Philosophy under the most eminent Pandits there. It was probably here that Vyāsātīrtha made his first-hand acquaintance with the systems of Śaṅkara and Rāmānuja—an acquaintance which stood him in such good stead in writing his great works: the *Nyāyāmṛta* and the *Candrikā*. After the completion of his studies at Kāñcī, he went over to the seat of Śrīpādarāya at Mulbāgal.⁵ It was then a great centre of learning; and there he spent many years in study and meditation. The studies had reference evidently to the Dvaita Vedānta as is clear not only from the fact that V. had already mastered the six systems at Kāñcī, but also from his own express acknowledgment to that effect at the end of his gloss on the *Upādhi-Khaṇḍana-Tīkā*⁶

V. is believed to have read under Śrīpādarāya for nearly 12 years.⁷ This seems to be a slight exaggeration in view of the fact that he was sent to the court of Śāluva Narasiṃha at Candragiri, by Śrīpādarāya,⁸ just about the time of the usurpation of Vijayanagar by the second dynasty,⁹—which according to competent historians, happen-

5. The facts that (1) V. is nowhere represented (in the biography of Somanātha) to have gone to Kāñcī at the bidding of Brahmaṇya (2) or visited him on his return from that city, clearly indicate that Brahmaṇya's demise must have taken place a few years earlier than his disciple's departure for Kāñcī.

6. लक्ष्मीनारायणाख्यात् द्वैतिकुलतिलकादधीतमध्वशास्त्रामृतेन व्यासयतिना विरचिता मन्दारमञ्जरी

समाप्ता (Colophon).

7. Such is the view expressed by the late Vidyāratnākara Svāmī of Vyāsārāya Mutt, quoted in the Introd. to the *Vyāsayogicarita*, p. lxx III.

8. Not by Brahmaṇya Tīrtha as we find stated on pp. 321-2 of the Madras Uni. His. Ser. XI.

9. This seems to be indicated by the curious fact that V. goes straight to Candragiri though Śrīpādarāya merely advised him to go to "the King's Court."

ed about 1485-86. We have therefore to cut short V.'s stay and studies at Muḷbāgal to five years, which is a reasonable period.

The latter part of the IV chapter of the *Vyāsayogicarita* gives a brilliant account of the arrival of V. at the court of Śāluva Narasiṃha at Candagiri and his grand reception there. Here he spent many years, honoured and worshipped by the King—"as Dattātreyā was by Kārtavīrya" (p. 40). Here he met and vanquished in intellectual tournaments many leading scholars of his day and conducted debates on such standard treatises on Logic as the *Tattvacintāmaṇi*. There is reason to believe that it was during this period that V. was entrusted with the worship of God Śrīnivāsa on the hill at Tirupati.¹⁰ Tradition says that he continued to worship at Tirupati for 12 years (1486-98). His South Indian tour must have been undertaken during this period when he was in the habit of quitting Tirupati for short intervals, entrusting the worship to some disciples.¹¹

It appears from Somanātha's account that V. did not quit Candagiri for a while after 1498. He evidently stuck to Śāluva Immadi Narasiṃha, the son and successor of Śāluva Narasiṃha, till Narasa became the *de facto* ruler of Vijayanagar soon after the settlement which he concluded with Tamma-rāya in 1498 (see Proddatūr 386 of 1904)—one of the terms of which was perhaps the establishment of V. as the spiritual adviser and Guardian Angel of the Kingdom.¹² However that may be, V. left for Vijayanagar in or about 1498 A.D. "at the pressing and persistent invitation of Narasa's ministers" (p. 54, lines 1-2 Text), and made it his permanent residence for practically

The terms in which V. commends Śāluva Narasiṃha when he first meets him (pp. 49-50 Text) also show that the latter's victorious campaign through S. India had come to a close by then.

10. Certain special honors shown to the Mutt of V. at Tirupati, the presence of a Vyāsarāya Maṭha on the hill and certain inscriptions on its walls as well as allusions in certain Songs of V. can be adduced as proofs of his having been entrusted with the worship.

11. See B. Venkoba Rau's Notes to the *Vyāsayogicarita*, p. 18.

12. Such is at any rate the interpretation put by Mr. Venkoba Rau on the words of Nuniz that "after this (settlement) was done, he (Narasanaque) told the King (Tammārāya) that he desired to go to Bisnāga, to do certain things that would lead to the benefit of the kingdom and the king, *pleased at that*, told him—so it should be" (Introd., XVII-XVIII). He also thinks that simultaneously with Narasa's campaigns between 1499-1500 V. started his reform of installing the 732 Hanuman idols in different parts of the Kingdom, beginning with the Yantroddhāra Hanuman at Hampi (Introd. XIV, XVIII). Cf. also p. 323 of *Studies in the III Dynasty of Vijayanagar* (Madras Uni. His. Ser. XI.).

the rest of his life. His entry into Vijayanagar and installation as the Guardian Saint of the kingdom are described in chapter V of Somanātha's biography. This place of honor given to V. was not confirmed without a challenge. Learned men from various parts of India came to challenge him to meet them in a public disputation. Led by Basavabhaṭṭa of Kaliṅga they pinned their 'challenges' (*Birudapatrikās* Text) to the palace pillars. The challenge was promptly taken up and V. met the opposing team of scholars and vanquished it completely after a protracted debate lasting for thirty days (p. 61, Text).

When Narasa was succeeded by Vīranarasimha, the position of V. remained the same at the court. Somanātha appears to say that it was during the reign of Vīranarasimha that Vyāsarāya started composing his great works : the *Candrikā*, *Tarkatāṇḍava* and *Nyāyāmṛta*.¹³

The accession of Kṛṣṇadevarāya in 1509, opened up a new chapter in the glory of V.—a chapter far more brilliant than any that had gone before. The Rāya had the greatest regard and respect for V. whom he regarded as nothing less than his कुलदेवता With thrilling emotion does Somanātha write :—

यावन्तो विषया हृता भुजबलं यावत्सपत्ना जिता
यावन्तश्च वदान्यता करसरोजाताश्रया यावती ।
यावत्यो धनसम्पदो गुणगणो यावांश्च यावद्यशः
तावत्कर्तुं मिथेष पूजनमसौ श्रीव्यासभिक्षो नृपः ॥

(p. 71. Text).

V. had already obtained by 1500, the honor of a green flag on a camel as a mark of respect from the Sultan of Bijāpur (p. XV, Introd. to Vy-carita).¹⁴ In 1511 A.D. he obtained from the king, the village of Pulambākkam in the Padaivīḍu-rājyam, for conducting the Āvaṇi festival in his own name, of God Varadarāja at Kāñcī, and also the

13. This is the order in which Somanātha has named the three great works of V. (pp. 64-5). But there is indisputable evidence to show that the *Nym.* was written *before* the *Candrikā* (see pp. 955, 984 of *Candrikā* Bombay 1913) and the *Tarkatāṇḍava* before the *Candrikā* (see p. 68 f. of *Candrikā*).

14. It may be remarked in passing that the honor of the green flag and a drum on the back of a camel is kept up to this day in the Maṭha of Vyāsarāya Sosale by the successors of V. The *Sāluvābhyudaya* says that Narasimha took the honor of the green umbrella in one of his campaigns against the Sultans. A camel corps furnished by one of his feudatories is also mentioned in the same context.

king's sanction for presenting a Śeṣavāhana of gold which had to be used as a vehicle for the God on the fourth day of all festivals (No. 370 of 1919, Epigr. Rep., 1912-20, Madras).

In an inscription on the Southern wall of the maṇṭapa in front of the Viṭṭhalasvāmi temple at Hampi, which records a grant to the temple in 1513 A.D. by Kṛṣṇadevarāya, V. is referred to as "the Guru" without any prefix whatever विनियोग नानावर्गद नैवेद्य सह गुरुगुरु व्यासरायरिगे पालु ॥ (S.I.I., IV, no. 48 of 1889).

Another inscription in 1514, recording a grant to the Kṛṣṇasvāmi temple at Hampi remarks *inter alia* that after installing the image of Kṛṣṇa, which he brought from Udayagiri, at Vijayanagar, the Rāya appointed Rāmaṇṇācārya and Muḷbāgal Tīmmanṇācārya as Arcakas. The names are undoubtedly those of Mādhva Brahmins. V. himself in one of his Kannada songs, sang of the advent of Bālakṛṣṇa from Udayagiri (see Vyāsarāya Kīrtanegaḷu, Udipi, no. 60).

Subsequent to the Rāya's return from Koṇḍavīdu there was another grant to V. in 1516.

Towards the close of chapter V, Somanātha describes a significant episode in the life of V. Soon after his return to the capital from the Kalinga war (1516) and his treaty with the Gajapati, Kṛṣṇadevarāya one day, rushed to the presence of V. with a work on Advaita Vedānta,¹⁵ sent for criticism by the Kalinga ruler. He further says that the Kalinga king Vidyādhara Pātra had sent the work to Kṛṣṇarāya through his commander-in-chief at the instigation of some self-conceited Pandits of his court with a haughty challenge that it may be shown to V. and inviting him (V.) to refute it if he could.¹⁶ The challenge of the Kalinga king was in effect a challenge to the imperial dignity of the Rāya himself and to his dualistic leanings. And if in trying to defend these, the Rāya ran to Vyāsarāya, it only shows how indispensable he was to him.

15. This is clear from the nature of the adjectives employed :—

स्वामिन्, प्रतिभट्टादिविजयेषु भगवद्वचोभिः पलायितमिव स्वदेशे गूढं चरन्तं, सच्छास्त्रं सुत्रामजालस्य, प्राणभूतं मायामतस्य, तत्त्वं व्यामोहकशब्दाभिधेयस्य, भूतिमनृतस्य दुष्टपक्षं बन्दिग्राहकमिव गृहीत्वा..... (p. 70).

16. विद्याधरपात्रनामा कलिङ्गाधिपतिः कैश्चिदहंयुर्भविष्यच्चिद्भिः प्रचलितोत्साहः शुक्नीडाकारायां पुस्तिकायां आबध्य, भगवते व्यासयोगिने प्रदर्शनीयोऽयं दुस्तरयुक्तिविस्तारितो महाग्रन्थ इति स्वसेनापतिकरे मह्यं प्रेषिषत् । तदवश्यं तमेतं कतिपयैरेव दिनैर्दुर्लभ्याभिर्बचोयुक्तिभिर्भगवान् शरद्वलाहकमिव भ्रंभाभिः शक्लीकर्तुमर्हति इति पुस्तिकां सन्निधौ सन्दर्शयामास ॥ (p. 70).

Unfortunately Somanātha has not given us the name of the work which was thus despatched to V. Among the works of V. however the only one which answers to the requirements of the case is the short polemical tract called *Bhedojjivana*. The original sent down to him from the Kalinga Pandits might therefore be presumed to be one to which the *Bhedojjivana* was a reply. From certain remarks let fall by the celebrated Logician Vāsudeva Sārvabhauma at the end of his commentary on the *Advaitamakaranda* of Lakṣmīdhara (of which a Ms. is noticed by Rājendra Lal Mitra in his catalogue) it appears that he lent his willing cooperation to the Gajapati ruler Kūrma Vidyādhara in devising ways and means of humiliating Kṛṣṇadevarāya of Vijayanagar :

कणटिश्वरकृष्णरायनृपतेर्गोर्वाग्निनिर्वापके
अत्र न्यस्तभरोऽभवद्गजपतिः श्रीरुद्रभूमोपतिः ।
तस्य ब्रह्मविचारचारमनसः श्रीकूर्मविद्याधरस्या-
नन्दो मकरन्दशुद्धिविधिना सान्द्रो मयायं ततः ॥

It was evidently some *other* work of this Vāsudeva Sārvabhauma, if not his commentary on the *Advaitamakaranda*, that formed the subject of the challenge referred to by Somanātha. It is worthy of note that the name of Kṛṣṇarāya's rival mentioned by Somanātha answers more or less closely to the one referred to by Vāsudeva in the above verse. Here then, is interesting light thrown on the historical authenticity of the incidents recorded by Somanātha. Apparently the Kalinga king wanted to outshine Kṛṣṇarāya not only in military prowess but in literary glory also.

Before starting on his Raichur expedition in 1520 the Rāya performed a *ṛttamishaka* for V. (pp. 71-5 of the Text). In 1526 V. received the village of Beṭṭakoṇḍa from the King. This was renamed Vyāsa-samudra after the big lake which he caused to be dug there.¹⁷ There are two earlier epigraphs of which the one dated 1523 (Svabhāmu) records the grant of the village of Brahmanyatīrthapura to V. He however gave it away to Brahmins. The grant of 1524 is recorded on a stone in front of the Vyāsarāya Maṭha at Tirupati, showing probably that V. was then at Tirupati praying to God Śrīnivāsa¹⁸ during the

17. It is referred to by Purandara Dāsa in one of his songs :—

देशाधिपते बन्द क्लेशंगल कलदु सिंहासनवनेरिमेरेदि जगवारिय व्यासाब्धियन्तु कट्टिसि, देशदोल्लोह ॥
(p. 16) (Song no. 20, Mādhvabhajanamañjarī, K. Bhandappa, Dharvar 1932).

18. See Song of V. to Śrīnivāsa (no. 53, Udipi).

dreaded period of Kuhu-yoga. It was presumably after the great Kuhu-yoga of 1524 that Vyāsasamudra was granted to V.¹⁹ It is clear from Somanātha's account that V. moved away for some time to his retreat at Beṭṭakoṇḍa—presumably during the period of "temporary estrangement" from the Rāya when Aḷiya Rāmarāya was at the helm of affairs.²⁰ The Rāya seems to have gone on a pilgrimage and returned by 1527 to his capital where he made another grant to V. (Shimoga 85), the terms of which imply that V. was completely restored to his former position in the estimation of the King:—

निगमागमनिर्णोतनिर्जराधीशमन्त्रिणे ।
 नृपेन्द्रमुकुटीरत्ननीराजितनिजाङ्गये ॥
 निरहंकारचित्ताय नीतिमार्गोपदेशिने ।
 शेषाय नरवेषाय शिक्षितान्तरवैरिणे ॥
 पुराणपुरुषध्यान पुण्यतृप्तफलमूर्तये ।
 मध्वाचार्यमतांभोजमार्ताण्डायिततेजसे ॥
 ब्रह्मण्यतीर्थशिष्यायब्रह्मनिर्मलमूर्तये ।
 व्यासतीर्थयतीन्द्राय विद्वदिन्दीवरेन्द्वे ॥

Somanātha goes on to say that after the death of Kṛṣṇadevarāya (1530), Acyutarāya continued to honor V. for some years. It was in Acyuta's reign that the image of Yogavarada Nṛsiṃha was set up by V. in the courtyard of the Viṭṭhaleśvara temple at Hampi in 1532. Seven years later, V. passed away at Vijayanagar on the fourth day of the dark fortnight of Phālguna of Vilambi, corresponding to Satur-

19. It was during one of these Kuhu-yogas that tradition says that V. himself ascended the throne of Vijayanagar to save his disciple Kṛṣṇarāya from peril. The appellation व्यासराज and the custom of "Dīvaṭṭigesatam" which is, to this day observed at the Sosale Mutt when the Svāmi seated on his throne is hailed at a daily darbar every evening as the "Lord seated on the Vijayanagar Karṇāṭaka Siṃhāsana" serve to keep in memory the forgotten past. Purandara Dāsa also has referred to the occupation of the Vijayanagar throne temporarily by Vyāsarāya (vide song q. in f. n. 17 above.)

20. The period between 1524-26 was a gloomy one. Taken ill, the Rāya was presumably forced to abdicate in favour of his son Tirumaladevarāya in or about 1524 (Ep. car. Bglore, Mayadai 82), and after his death in 1525, to take his brother Acyuta as Regent (Vy. carita, p. 76). The once popular view that the Rāya died in 1524 cannot be upheld as it is definitely set at nought by many inscriptions of a subsequent date.

day, the 8th March 1539 A.D.²¹. His mortal remains lie entombed at Navabṛṇḍāvana, an island in the Tuṅgabhadṛā, about half a mile east of Ānegondi.

II

Vyāsatīrtha was almost the Second Founder of the System of Madhva. In him the secular and metaphysical prestige of the religion and philosophy of Madhva reached its highest point of recognition. The strength which he infused into it through his labours and personality has contributed in no small measure to its being even to-day a living faith in S. India. The learned Appayya Dīkṣita is reported to have observed that the great V. 'saved the melon of Madhvaism from bursting, by securing it with three bands in the form of his three great works : the *Nym.*, *Turkatāṇḍava* and *Candrikā*'. These showed to the world that the followers of Madhva can more than hold their own against the best intellects of India in the field of Logic and Metaphysics — Nyāya, Mīmāṃsā, Vedānta etc. There is a tradition that when the North Indian Logician Pakṣadhara Mīśra visited South India, he had spoken very highly of V :—

यदधीतं तदधीतं यदनधीतं तदप्यधीतम् ।

पक्षधरविपक्षो नावेक्षि विना नवीनव्यासेन ॥

With all his accomplishments, V. was not a mere doctrinist. He was essentially large-hearted. He was at home on the naked peaks of the intellect and intuition as in the depths of Religion, love, and devotion to God. His religion of service, sympathy and effort (Vide Kīrtane no. 55 of Uḍipi) was a direct corollary to his Philosophy. By its side, the homage of Madhusūdana Sarasvatī : वंशीविभूषितकरात् कृष्णात्परं किमपि तत्त्वमहं न जाने" (at the end of the disquisition on the निराकारब्रह्मवाद) turns out to be little more than hollow sentimentalism in one whose highest Brahman is characterless !

If the Kings of Vijayanagar were models of religious toleration, we have not a little to thank V. for it. While his influence lasted, he could easily have feathered his own nest and seen to the religious and

21. The date is given by Purandaradāsa, in one of his songs which is quoted by Kittel in his *Nāgavarmana Chhandassu* (1875, p. lxii):—

विलम्बितसरदल्लि विजयनगरदल्लि फल्लुन चबुतियल्लि स्थिरवारदल्लि ॥

The author of the Madras Uni. His. Ser. XI. feels rather vaguely that V. "appears to have breathed his last a little later" than 1532 !

political domination of the men of his sect. But he despised such ambitions. He was scrupulously just and fair in his dealings and treatment of others. He treated Basavabhaṭṭa whom he vanquished in debate, with exemplary kindness and regard.²² He could easily have created a monopoly of worship for the men of his faith at Tirupati during his sojourn there, but he did not. He was no inciter of hatred against Śiva though personally a staunch Vaiṣṇava. He had himself composed a stotra in praise of Śiva²³ and to this day a special service is held in the Vyāsarāya Maṭha at Sosale on the night of the Mahā-śivarātri when the Śiva-liṅga said to have been presented to V. by Basavabhaṭṭa of Kaliṅga,²⁴ is worshipped. He allowed his preachings to take their gentle course of persuasion and disliked proselytisation for the sake of numbers. He did not misuse his influence with the Kings to make his faith the state-religion. This attitude deserves to be contrasted with that of the Śrīvaiṣṇavas reported in the *Prapannāmṛta* :—

श्रीवैष्णवे विरूपाक्षे प्रशासति महीमिमाम् ।

आसन् श्रीवैष्णवाः सर्वे यथा राजा तथा प्रजाः ।

विरूपाक्षामिधा मुद्रा * * *

But in V.'s days Virūpākṣa was the tutelary deity of the Kingdom side by side with Viṭṭhala, and the Seal of Virūpākṣa instituted by Vidyāranya was still in use. It is then a very unfair estimate of V. that we have in the *Madras University Historical Series* No. XI, that "in spite of the efforts of V., Mādhvaism did not evoke popular enthusiasm. The only contribution which it made to religion was to give an exaggerated importance to the worship of Hanuman. A few Brahmins and fewer nobles, accepted the teachings of Madhva" (p. 323—Italics mine). The message of V. was addressed to the thoughtful among men and the really sincere among the people. His mission had two sides—a religious and a philosophical one. And it is sufficient to say that in both these fields the impression he had made was both profound and lasting and destined to lead to far-reaching consequences. We shall have something to say of his labours in the domain of Philosophy, anon. It may be pointed out here, that V. was a Psalmist in Kannaḍa—and has himself composed many beautiful songs in the language of his native province—Kannaḍa, a fact of which absolutely no mention has been made by the writer of *Madras Uni. His. Series* No. XI. More

22. See *Vy. carita*, p. 61.

23. *Laghu-Siva-stuti*, Belgaum, 1931.

24. See Venkoba Rau, introd. *Vy. Carita*, p. CXXV.

than even for his own compositions, his name would have to be invested with special significance as that of the person who gave India a Purandara Dāsa and a Kanaka Dāsa, both disciples of V. Those who know anything about the history of the Dāsa Kūṭa and how much Kannada Literature is indebted to these great poets of Karṇāṭaka, will have no difficulty in realising the vastness of the service rendered by V. to the cause of "popular religion"; for no one can deny that the Dāsas "evoked popular enthusiasm" for the philosophy of Madhvācāya. Their influence on the ethical uplift of the masses is too well-known to need elaboration here.

Nay, the influence of V. was felt far beyond the limits of Karṇāṭaka—in the heart of distant Bengal. It is now fairly well-known, though no reference is made to it in the *Madras Uni. His. Series* No. XI, that the Bhakti Movement of Caitanya who flourished wholly within the lifetime of V., owed a good deal of its inspiration to the philosophy of Madhva, and its exposition by V.²⁵ A section of the followers of Caitanya goes so far as to claim that Caitanya himself comes of a line of ascetics from Madhva through Rājendra Tīrtha and V. Caitanya's biographer Kavikarnapūra speaks reverently of the three great masterpieces of V. (the Vyāsa-traya as they are traditionally known—viz., the *Nym.*, *Tarkatāṇḍava* and *Candrikā*) as the Viṣṇu-Saṁhitā!

व्यासतीर्थस्तस्य शिष्यो यश्चक्रे विष्णुसंहिताम् ॥ If properly

viewed, the influence of V. would be seen to have brought about a glorious religious renaissance in the XVI century,²⁶ simultaneously in the North and in the South of India! Of his place in the domain of Indian Philosophy we shall say something in the next section. Historical scholarship must indeed be blind and bankrupt if it could discover in V.'s life and mission nothing more enduring than "an exaggerated importance to the worship of Hanumān", and the erection presumably of a few temples to that god!

THE WORKS OF VYĀSARĀYA.

V. wrote eight works in all. His major and most important works

25. The doctrine of गुणगुण्यभेद in God, emphasised by Rūpa Gosvāmin in his *Laghuhbhāgavatāmṛta*, the concept of Viśeṣa, the supremacy of Viṣṇu and the exaltation of Bhakti as the highest means of release, adopted by the followers of Caitanya, are directly the result of the teaching of the school of Madhvācārya.

26. Which indubitably sowed the seeds of the great Devotionalistic renaissance in the Mahārāṣṭra under Tukārām and his contemporaries in the next.

are three²⁷, the *Nyāyāmṛta*, *Tarkatāṇḍava* and *Candrikā*, collectively called व्यासत्रय । Among his minor works, the first place is to be given to the *Bhedojjīvana*.²⁸ Next come his learned and highly abstruse commentaries on the खण्डनत्रय and the *Tattvaviveka*. A *Granthamālikā-Stotra* giving a list of the 37 works of Madhva, is also ascribed to him in the catalogue of the T.P.L., and published in the S.M. (382-3). The oft-quoted verse : श्रीमन्मध्वमते हरिः परतरः....." embodying the principal tenets of Madhva is also traditionally ascribed to him. It is quoted by Baladeva Vidyābhūṣaṇa in his *Prameyārlnāvali*, as an ancient verse (तदुक्तं प्राचा), and he has also given a parallel verse of his own : श्रीमध्वः प्राह विष्णुं परतमं....." All the above mentioned works of V. have been printed.²⁹

(1) The *Nyāyāmṛta*

In this, his *magnum opus*, V. undertakes a complete vindication of the philosophical power and prestige of the dualistic metaphysics of Ānandatīrtha, together with a discussion of its concomitant problems. The work is divided into four chapters or *Paricchedas*. The first discusses the central idea Monism—the unreality of the world and goes into the various proofs (प्रमाण) upon which it is sought to be based. Such doctrines of the Advaita as have a direct bearing upon this thesis of the falsity of the world like the doctrines of degrees of reality, Adhyāsa (कर्तृत्वाध्यास, देहात्मैक्यभ्रम), Anirvacanīyatā etc., are fully thrashed out. The various definitions of मिथ्यात्व (the concept of unreality) propounded by Advaitins, are analysed and refuted. The four Types of "Hetu" in the familiar विश्वमिथ्यात्वानुमान are then criticised. The sanctity of प्रत्यक्ष and its inviolability through Anu-

27. The "*Sudhā*" is NOT one of the works of V. as we have it in the Madras Uni. His. Series no. XI (p. 424) ! nor did V. "comment upon several upaniṣads such as the *Chāndogya* and the *Māṇḍūkya* etc." (ibid.). The *Sudhā* is a work of Jayatīrtha and the comm. on the Upaniṣads were written by the earlier V. who was a pupil of J. The author of the Nym. generally describes himself as "Vyāsayaṭi", disciple of either Brahmaṇya Tīrtha or of Lakṣmī-nārāyaṇa Tīrtha.

28. Wrongly attributed to Vādirāja in Rice's Catal.

29. The Editor of the T.P.L. Cat. is mistaken in his statement that *Bhedojjīvanam* and the gloss on the *Upādhikhaṇḍana* are yet to be printed.

māna and Āgama, are upheld. The अपछेदन्य of the Pūrva Mīmāṃsā and its repercussions on the controversy of प्रत्यक्ष vs. आगम, are then made clear. Certain representative texts of Monism are reinterpreted. The doctrines of दृष्टिस्मृति, एकजीवाज्ञानवाद, भावरूपाज्ञान (Citsukha) and the question of its locus, the divergent views of the *Bhāmatī* and the *Vivaraṇa* on this point, are elaborately dealt with.

The second Pariccheda opens with a refutation of the concept of अखण्डार्थ and its application to Upaniṣadic texts (लक्षणवाक्यस). Advaitic doctrines like those of निर्गुणत्व, निराकारत्व, स्वप्रकाशत्व, and अवाच्यत्व of the Brahman are repudiated and their theistic opposites upheld. Difference (भेद) is shown to be real, cognisable and characterisable with the help of Viśeṣas. Madhva's scheme of five-fold difference (पञ्चभेद) is shown to have the sanction and support of the three Pramāṇas. The ideas of the material and efficient causality of Brahman are shown to be devoid of any real sense on the Advaitic view. The doctrine and concept of identity (ऐक्यं) are closely examined and shown to be unintelligible, impossible. The chapter winds up with a discourse on the atomicity of the soul (Dvaita view).

The third chapter is devoted to a critical examination of the part played by the various means of Realisation : श्रवण, मनन, religious instruction, self-discipline, etc. expediting God-realisation.

In the fourth and last Pariccheda is elucidated the doctrine of Mukti as understood by Madhva. Other views of Mokṣa are criticised with a good grasp of details. The Advaitic view of release as being identical with cessation of Avidyā is refuted. The prospect of a characterless bliss is shown to be utterly devoid of all motive-force for human effort towards salvation. The doctrine of Jīvan-mukti is next examined. As against the Viśiṣṭādvaitin, the author maintains that gradation of bliss does obtain in Mokṣa and must do so in view of certain logical necessities and scriptural admissions and sanctions.

The *Nyāyāmṛta* (Nym.) is thus a Novum Organon of Dvaita polemics. V. was not merely the founder of the new Polemics of his school but the fountain-head of the entire controversial literature of the Dvaita-Advaita schools subsequent to him. His work has been the starting point for a series of brilliant controversial classics whose composition and study have been the chief occupations of the intellectuals of the three succeeding centuries.³⁰ "It was V. who for the first

30. The challenge thrown out by V. was taken up and answered by Madhu-

time took special pains to collect together from the vast range of Advaitic literature all the crucial points for discussion and arrange them on a novel yet thoroughly scientific and systematic plan.³¹ He has exhibited in his work more than a hundred *points d'appui* and has "discussed them with a minuteness of observation and mastery over details rarely to be found even among some of the Titanic Thinkers of the past."³² A glance at the table of contents of the *Nym*. would give a sufficient idea of the stupendousness of the task attempted and achieved by V. He has kept himself well within the bounds of the main problems of the contending systems. He is unsurpassed in the careful handling of Texts, acuteness of scholarship and range of study of the works of various systems of thought. He has freely laid under contribution the principles of interpretation and dialectics enunciated and developed in the standard treatises of the Nyāya-Vaiśeṣika, Mīmāṃsā and grammatical schools. The following are some of the important authors and works of other systems cited in the *Nym* :—

1. Nyāyakusumāñjali
2. Bauddha-dhikkāra
3. Bhāratī Tīrtha
4. Iṣṭasiddhi
5. Khaṇḍanakhaḍya
6. Mādhyamaka Kārikās
7. Mahābhāṣya
8. Nyāsa
9. Nayaviveka
10. Padamañjarī
11. Sureśvara Vārttika (Brh. Up.).
12. Siddhitraya
13. Śaṅkara's bhāṣya on the B.S.
14. Tūp Tīkā
15. Tattvapradīpikā (Citsukha)
16. Upadeśasāhasrī

sūdana Sarasvati in his *Advaitasiddhi*. The views of Madhusūdana were refuted by Rāmācārya in his *Taraṅgiṇī* (beg. 17th cent.). This was answered by Brahmānanda Sarasvati which again was refuted by Vanamāli Mīśra in his *Saurabha* (end of 17th cent.).

31. MM. Anantakṛṣṇa Sastri, *Intro. to the Advaita Siddhi*, Calcutta Oriental Series, no. IX, 1934, p. 36.

32. *Ibid.*

17. Vedāntakaumudī
18. Vivaraṇa
19. Ānandabodha.

Vyāsarāya's work is not a mere summary of the teachings of his predecessors. It is nothing short of what it claims to be—a *Novum Organon*, in the history of Dvaita thought :—

विक्षिप्तसंग्रहात्कापि काप्युक्तस्योपपादनात् ।

अनुक्तकथनात्कापि सफलोऽयं श्रमो मम ॥

In the true spirit of a philosopher, the author goes on through a long and arduous process of thought-dissection to show that the thesis of Monism cannot be proved and that there is no philosophical justification for rejecting the reality of the world that is established by all known means of proof and knowledge. In doing all this, he has nowhere exceeded the bounds of strict philosophical calm, dignity and equity. Nowhere has he indulged in digressions—nowhere have his criticisms degenerated into cavil or calumny. In this respect he has shown himself to be far superior to his critic Madhusūdana Sarasvatī who has many a time in his work fallen a prey to the temptation of the invective rhetoric. Vyāsarāya's work acted as a leaven upon all analytic philosophy in the Vedānta and was directly responsible for the birth of Neo-Advaita and for this no small credit is due to him.

(2) *Tarka-Tāṇḍava*

While ever ready to make free use of the categories and thought-measuring devices of the Nyāya-Vaiśeṣika in its fight with Monism, the school of Madhvācārya has its own differences with the former.³³ These have been made clear by Madhva himself in his AV. and other works and by Jayatīrtha in his NS. In his own inimitable way, Vyāsatīrtha has undertaken a thorough and up-to-date examination of the points of difference between his school and that of the Nyāya-Vaiśeṣikas. This examination is embodied in the *Tarkatāṇḍava* which criticizes the views expressed in such standard treatises of Nyāya school as the *Kusumāñjali* of Udayana the *Tattvacintāmaṇi* of Gaṅgeśa and in the commentaries of Pakṣadhara, Pragalbha, Yajñadatta etc.

33. Such as, for example, the question of (1) the personality of God ; and its constitution ; the nature and number of divine attributes, (2) the eternality of sound ; (3) प्रामाण्य whether "Svataḥ" or "Parataḥ" the eternality and authorlessness (अपौरुषेयत्व) of the Vedas etc. The views of the Bhāṭṭa and Prābhākara Mīmāṃsakas also are examined and refuted.

Tradition has it that the contemporary scholars of the Nyāya-Vaiśeṣika were first loudest in their laudation of V. for his famous attack on Advaita in his *Nym.*, but that they grew restive and silent all of a sudden when he came out with his *Tarkatāṇḍava*, which was directed against themselves. They are said to have voiced their indignation and disapprobation by an oft-quoted line :—

न्यायामृतजिता कीर्त्तिः ताण्डवेन विनाशिता ॥

Only parts of the work were originally published from Kumbakonam in 1905. The authorities of the Govt. O. L. Mysore have latterly undertaken to publish the whole of it together with the illuminating commentary of Rāghavendra Svāmin. Two volumes of the publication have already appeared³⁴ and the rest are soon expected.³⁵

The work is divided into three Paricchedas corresponding to the three Pramāṇas recognised in the system of Madhva. The author correlates his comments and criticisms with the views formulated in the VTN. and its Tikā (by Jayatīrtha), the NS. and the *Pramāṇapaddhati*. The first chapter is divided into six sections entitled : (1) Veda-prāmāṇyavāda ; (2) Vedāpauruṣeyatvavāda ; (3) Īśvara-vāda ; (4) Varṇanīyatvavāda ; (5) Samavāyavāda ; and (6) Nirvikalpakavāda. The first section discusses the various definitions of the self-validity of knowledge, V. formulating as many as three Siddhānta-definitions of it and criticising those propounded by Gaṅgeśa and his commentator Pakṣadhara Mīśra. (p. 30, Mysore Edn.). After advancing syllogistic proofs in support of the स्वतस्त्व of Prāmāṇya, admitted by the Dvaitin, the author goes on to refute all the recorded objections to it offering in his turn fresh objections to and criticisms of the doctrine of the extraneous validity (परतस्त्व) of knowledge upheld by such writers as Gaṅgeśa, Pakṣadhara, Yajñapati Upādhyāya (p. 157, 166, and 215) and Pragalbhācārya (p. 166), alias Śubhaṅkara. The extraneous character of invalid knowledge is also dealt with. The second section in the first chapter is the Īśvara-vāda, wherein the establishment of the Vedas and criticises the doctrine of divine authorship of the Vedas (ईश्वरकृतत्व) held by the Nyāyavaiśeṣika. The most important section in the first chapter is the Īśvara-vāda, wherein the establishment of God on the basis of pure reasoning is hotly disputed and shown to

34. Between 1932-35.

35. B. Venkoba Rau in his *Introd.* to the *Vyāsayogicarita* observes that the opening verse in the *Tarkatāṇḍava* addressed to God Aprameya shows that it was presumably composed at Matur in the Channapatna Dt.

be impossible. In this connection the author has cited all the 'eight points' of Udayana (raised in chap. V of the *Kusumāñjali*) and has refuted them together with their explanations attempted by Vardhamāna Upādhyāya.³⁶ The next section seeks to establish the eternality of sound on the basis of perception, inference and revelation and refutes the doctrine of their non-eternality held by the Naiyāyikas, and after that the concept of Samavāya. The last deals with indeterminate perception which is similarly dealt with.

The second Pariccheda establishes Śakti which is one of the ten categories recognised in the Dvaita system after considering the various objections brought forward by the Logicians against its recognition as a distinct padārtha. The other subjects dealt with are (1) Jāti and (2) the conception of Vidhi (injunction) and what constitutes its essence.

(3) The *Tātparyā-Candrikā*³⁷

The *Tātparyācandrikā*,³⁸ more familiarly known by its shorter title of *Candrikā*,³⁹ is a controversial commentary on Jayatīrtha's *Tattvapraśāṅgikā*, and thus belongs to the Sūtra-prasthāna of the Dvaita Vedānta. It is later than both the Nym.⁴⁰ and the *Tarkatāṇḍava*,⁴¹ as can be seen from references to them in it. Though going by the modest title of a commentary it is in reality an original contribution of the author, to the subject of the Philosophy of the Sūtras of Bādarāyaṇa through a comparative study and criticism of the Bhāṣyas of Śaṅkara, Bhāskara, Rāmānuja and Yādavaprakāśa and of the super-commentaries *Pañcapādikā* and *Vivaraṇa*,⁴² *Bhāmātī*, *Kalpa-*

36. A quotation from his *Tattvabodha* on the *Nyāyasūtras* occurs on p. 279 vol. 2, of the *Tarkatāṇḍava*.

37. Published by T. R. Kṛṣṇacārya of Kumbakonam, with two com. (Nirnayasagar Press, Bombay). Another edn. (incomplete) was issued from Mysore (Govt. O. S.) in four parts.

38. Not "*Tātparyasamgraha*" as we find it mentioned on p. 238 of the Vijayanagar Sex. Com. Vol., 1936.

39. These are not two different works as fancied by V. Rangacharya (Ins. Madras Presidency, Vol. i, p. 308); the work is not known as "*Madhvātātparyācandrikā*" as stated on p. 424 of the *Madras Uni. His. Series no. XI*.

40. See *Candrikā* II, 3, Adh. 14, p. 955 (Kumb.); p. 18b, line 4; and II, 3, Adh. 19, p. 984.

41. P. 68, line 1, Comm. of Rāghavendra on *Candrikā* (Kumbakonam).

42. यत्, पञ्चादी विवरणयोक्तं॥ p. 98, l. 4. Quotations are given not

taru, the *Śrutapṛakāśa* and the *Adhikaraṇa-sūrāvalī* of Vedānta Deśika. The author endeavours to show that perfect harmony of spirit and letter prevails only between the interpretations of Madhva and the Sūtras of Bādarāyaṇa and that other Bhāṣyas and their respective commentaries are not so well attuned or, in some cases, not at all, to the Sūtras (verse 10). There are thus two sides to the work : a constructive and a destructive one.⁴³ The first is to be seen in the attempt at reinforcing the interpretations of Madhva by additional arguments and harmonising the views of Madhva and those of his commentators following different lines of interpretation occasionally. As a notable instance of this may be mentioned the harmonisation brought about among the views of Trivikarma Paṇḍita (TD), *Sannyāyaratnāvalī* and the TP of Jayatīrtha (pp. 77-78). V. also undertakes to make clear what is obscure in the sūtras, the bhāṣya of Madhva and in the Comm. thereon :—

सूत्रे भाष्येऽनुभाष्ये च सन्न्यायविवृते तथा ।

टीकासु च यदस्पष्टं तच्च स्पष्टीकरिष्यते ॥

He quotes where necessary from the AV, VTN and the *Nyāya-vivaraṇa* (pp. 50 ff.).

As for the destructive side of the work, the author pursues with relentless energy, the interpretation of rival schools (*under each and every adhikaraṇa and Sūtra*) and picks out numerous flaws at every step :

प्रतिसूत्रं प्रकाश्येते घटनाघटने मया ।

स्वीयान्यपक्षयोः सम्यग्विदां कुर्वन्तु सूरयः (verse 10)

The *Candrikā* is thus a remarkable commentary of the Dvaita School, in which the dialectic machinery is applied with equal success and brilliance to the purely interpretative literature on the Sūtras.

only from the Bhāṣyas of Śaṅkara, Rāmānuja etc. but also from the *Bhāmatī*, *Kalpataru* (p. 984 and 928, Kumbakonam edn.)

43. The following is a fitting tribute to the *Candrikā* :—

अमूलाग्रनिबद्धतर्कजटिलं शब्दैकजीवातुकं

मीमांसातुनयं च शङ्करवचो हुङ्कारभङ्गप्रदम् ।

शास्त्रं तन्त्रचतुष्टयात्मकमिदं निस्वप्रतन्त्रान्तराः

व्याख्यास्यन्ति कथं पठन्ति च कथं किं वा कलौ दुष्करम् ॥

(Anonymous)

A beginning in this direction had already been made by Madhva himself in his AV and by Jayatīrtha in his NS and V. has merely carried this to perfection even as desired by Jayatīrtha himself :—

सूत्राक्षराणां
अर्जवानार्जवादिचिन्ता शिष्यैरेव क्रियताम् (NS. ii, 2. adh. 6, p. 880).

The *Candrikā* terminates however with the second Adhyāya of the Sūtras.⁴⁴ It was completed (up to the end of the fourth chapter) by Raghunātha Tīrtha, the tenth Pontifical successor of Vyāsarāya.

The total number of granthas in the *Candrikā* is 3450. It is the earliest commentary on the *Tattvapraśāṅgikā* (TP) of Jayatīrtha, that has come down to us. But it is certainly not the earliest ever written : V. himself on one occasion, quotes from an earlier Com. :

केचित्, “प्राप्ती भुक् शुद्धिचिन्तयोरिति वचनात् चिन्तात्मकज्ञानार्थोऽपि भूधातुरस्तीति,
वो शुष्माकं भाः, साकारत्वेनाभिमतं ज्ञानमिति वा अभिप्रेत्य, भाव इत्युक्तिः” इत्याहुः ।
(ii, 2, adh. 9, p. 919f.).

It is well known that the rules of Pūrvamīmāṃsā and its *adhikaraṇa-nyāyas* do not play a prominent part in the Sūtra-interpretations worked out by Madhva and some of his immediate disciples,⁴⁵ as they do in the case of Śaṅkara and Rāmānuja and their commentators. We have seen that Madhva relies instead, upon the principles of interpretation and interpretational exegesis contained in the *Brahmatarka* and such other works. The conclusion was apt to be drawn from this apparent indifference of Madhva to the science of Pūrvamīmāṃsā that its rules were more or less hostile to him, and that therefore he had cleverly evaded them.⁴⁶ Whatever the truth of the matter, V. saw that the time had come for a spirited defence of the interpretations of Madhva in the light of the rules and principles of the Pūrvamīmāṃsā. With this end in view, he endeavoured to demonstrate that Madhva's

44. There is no reason to suppose that V. was prevented by circumstances beyond his control from finishing his *Candrikā*. The stoppage at the end of the second Adhyāya was evidently deliberate as the third and the fourth adhyāyas (साधन and फल) do not contain much controversial stuff, the little they contain to that effect having been already dealt with in the third and fourth Paricchedas of the *Nyāyāmṛta*.

45. For stray references to Pūrvamīmāṃsā rules, however, see Padmanābha Tīrtha's *Sannyāyaratnāvalī* (p. 6, and AV loc. cit.).

46. Jayatīrtha too had not felt the necessity of justifying Madhva's interpretations in the light of the Pūrvamīmāṃsā. A later commentator Satyanātha, has tried to cut the gordian knot by boldly declaring that Madhva has not followed the Mīmāṃsā rules! (*Abhinavagadā*, p. 10).

interpretations are in full conformity with the general and particular principles of the Mīmāṃsakas and that they are *not* opposed to any principle or principles of theirs that we know of. This was indeed a bold bid and somewhat of an uphill task ; but V. has well-nigh accomplished his purpose and proved his case by citing a number of these nyāyas into the body of his exposition,⁴⁷ and correlating them to the views of Madhva. A similar procedure is adopted with reference to the rules and principles of the Vyākaraṇa Śāstra of Pāṇini and his followers. These two features are common to the *Nyāyāmṛta* also. Most probably the critics of Madhva had already begun to make this deficiency of the Dvaitins their chief plank of attack, and V. was in duty bound to set his house in order. The new move made by him consequently represents a new phase or development in the Dvaita Vedānta and its literature. From V. onwards, the appeal to Pūrvamīmāṃsā becomes more or less regular and moral in Dvaita Literature.

Both in his *Nym.* and the *Candrikā*, V. has exhibited his remarkable command over the Mīmāṃsā Śāstra and its literature⁴⁸, and shown to the world of scholars that the system of Madhva has nothing to fear from the Mīmāṃsā Śāstra, but can always look it in the face and claim its support too, in many instances.

The following are some of the authors and works of other systems of thought cited in the course of the *Candrikā* :—

Bhāskara	Nyāsa	Rgvedānukramaṇī	Vivaraṇa
Kaiyata	Nibandhana	(Kātyāvana)	Yādavaprakāśa
Kalpataru	Padamañjari	Śaṅkara's Bhāṣya	Śloka-vārttika
Mahābhāṣya	Pañcapadikā	on B.S.	(Kumārila)
Mahābhārata	Bhāmatī	Śribhāṣya	
		Tantrasāra (Mīmāṃsā)	

Like the *Nym.*, the *Candrikā* too has given rise to some kind of controversial literature based upon it.⁴⁹ But the critics of V. in this case were neither so powerful as in the other instance, nor command-

47. Cf. सम्मतं चैतन् मीमांसकानामपि—p. 192, 195, 640-4, 657, 722 f. : 787; 790.

अथप्रतिग्रहेष्टि—pp 188, 463.

48. Quotations appear from the *Tantrarātna*, the *Śāstradīpikā*, the *Sabara-bhāṣya*, Kumārila's *Vārttikas* etc. (p.51). These references to Mīmāṃsā and Vyākaraṇa literatures have given ample opportunities to Rāghavendra and Keśava, the commentators on the *Candrikā*, to quote profusely from the standard works of these systems and elucidate the purport of the originals.

49. Raghunātha Śāstri Parvate replied to the criticisms relating to the Advaita Vedānta and its comm. in his *Śaṅkarapādabhūṣaṇam* (alias *Candrikā*).

ed such all-India importance and reputation. Nor were their writings of such vital importance and interest to the future of Vedānta philosophy. The history of this controversy and the works under this head will be dealt with later on.

The Mandāra-Mañjarī.

“*Mandāramañjarī*” is the general title of V.’s glosses on four out of the ten *Prakaraṇas* of Madhva: the three *Khaṇḍanas* and the *Tattvaviveka*. It is *not* the name or distinctive title of any *one* of them as is presumed on p. 424 of the *Studies in the III Dynasty of Vijayanagar* (Madras Uni. His. Series, no. XI).

(4) *Māyāvāda-Khaṇḍana-Mandāramañjarī.*

This gloss runs to 500 granthas and is known also by the name of *Bhāvaprakāśikā*.⁵⁰ It is a tough and keenly argumentative gloss replete with logical niceties, and therefore beyond the average student of Sanskrit. The remark applies equally to the other *Mandāramañjarīs*. The author himself says at the outset that he proposes to concentrate his attention only on the obscure passages of the *ṭīkā*⁵¹ and digress from the subject-matter only where it is absolutely necessary.

स्पष्टार्था य इह ग्रन्थः स न व्याक्रियते मया ।

ग्रन्थगौरवभीरुत्वान्न चोद्ग्रन्थं बहूचयते ॥

(5) *The Upādhikhaṇḍana-Mandāramañjarī.*

This gloss runs to over 1500 granthas and is terse as above. The colophon to this comm. gives the information that the author read the classics of the Dvaitavedānta under Lakṣmīnārāyaṇa Tīrtha, alias Śrīpādarāya.⁵²

khaṇḍanam). The *Tattvamārtāṇḍa* of Saṭhamarṇapakula Śrīnivāsa (Madras X. 4894) is another adverse criticism of the *Candrikā* and an answer to the objections raised in the latter to the interpretations of the *Śrībhāṣya*. Both these critics have been answered by subsequent writers from the Dvaita school.

50. By which name it is quoted in Rāghavendra Svāmin’s gloss on the *Candrikā* (p. 71, Mysore edn.).

51. It must be remembered that the *Mandāramañjarīs* are glosses on the corresponding *ṭīkās* of Jayatīrtha on the originals and are not thus directly connected with the *Prakaraṇas* in question.

52. An acknowledgement to this effect is made also in introductory verse no. 6 of the *Nym.* :— लक्ष्मीनारायणमुनीन्वन्दे विद्यागुरुन्मम ॥

(6) *Prapañca-mithyātvānumāna-khaṇḍana-Mandāramañjarī*

This commentary (granthas 660) also goes by the name of *Bhāva-prakāśikā*.⁵³ V.'s glosses on the *Khaṇḍanatraya* are the earliest ones now available to us. Barring Brahmaṇya and Śrīpādarāya, he is also the earliest commentator known to fame, on any of the works of Jayatīrtha. But an interesting reference to and quotation from an earlier commentary on the *Prapañcamithyātvānumānakhaṇḍanaṭīkā* occurs on p. 8, lines 17-15 of V.'s Comm. (Bombay 1896). Nothing however is known of this Commentator. He has doubtless been eclipsed by V. who stands out as the earliest commentator of any importance on the *ṭīkā*s of Jayatīrtha.

He goes far beyond the original in reinforcing Jayatīrtha's statement "सङ्घातप्रतीतिरसत्त्वाच्च बाध इति सदसदात्मकत्वेनाप्युपपत्तेः (p. 8, line 8) with elaborate allusions to certain technicalities of the Bhaṭṭa-Mīmāṃsakas (p. 18, lines 19-23). On p. 10, lines 16-24, the glossator repudiates certain attempted defence of the Advaitic position against the criticisms of Madhva.

(7) The *Tattvaviveka-Mandāramañjarī* has also been printed in Bombay.

(8) *The Bhedojjīvana*.

The references to the *Nym*.⁵⁴ and *Mandāramañjarī*⁵⁵ in the *Bhedojjīvana* show that the latter was undoubtedly the last of the works of V. It is a short Prakaraṇa in 275 granthas, and, as the name itself suggests, is intended to resuscitate 'Bheda' (difference) that has been stifled by the Monist. Its central thesis is that the reality of Difference is established by all the three Pramāṇas, viz. Sense-perception, Reason and Revelation. "Within a short compass he has covered the ground of the entire monistic literature pushed into contemporary prominence and argued an unexpurgated case for the Realism of Madhva."⁵⁶ Most of the arguments here are to be met with in more finished form in the *Nym*. which thus renders the *Bhedojjīvana* superfluous.

There is no connection whatever between the *Bhedojjīvana* of Vyāsarāya and the *Bhedadhikkāra* of Nṛsiṃhāśrama.⁵⁷ Neither of

53. व्यक्तं चैतत् मिथ्यात्वानुमानखण्डनभावप्रकाशिकायाम्—

Rāghavendra, gloss on TP., Bombay. p. 24.

54. P. 37, line 7; and P. 30, line 6, (Bombay 190).

55. P. 28, line 7.

56. R. Nagaraja Sarma, Reign of Realism in Ind. Phil., Madras 1931, p. 15.

57. The *Bhedadhikkāra* is merely a general defence of the Advaitic position. It does not quote from the *Bhedojjīvana*. The scheme of topics dealt with in

them is a criticism of the other though their titles may at first sight tend to suggest a relation. But the author of the *Bhedadhikkāra* is undoubtedly later than Vyāsarāya as can be seen from the criticisms which he has directed against certain passages of the *Nyāyāmṛta* in his *Advaitadīpikā*.⁵⁸ There is also independent evidence to show that one of Nṛsiṃhāśrama's works—the *Tattvaviveka*—was composed in 1558 A.D.⁵⁹ He was thus a younger contemporary of Vyāsarāya who died in 1539 A.D.

. *Abbreviations.*

A.V. = Madhva's *Anuvyākhyāna* ;

J. = Jayatīrtha ; T.P. = Jayatīrtha's *Tattvapraṇāśikā* ;

T.D. = Trivikrama Paṇḍita's *Tattvapradīpa* ;

NS. = *Nyāyasudhā* ; Nym. = Vyāsarāya's *Nyāyāmṛta* ;

VTN. = Madhva's *Viṣṇutattvanirṇaya* ;

SM. = *Stotramahodadhī*.

the two is entirely different. The *Bhedadhikkāra* refers to अर्थापत्ति as a means of establishing difference to be real and criticises the जीवविभुत्वपक्ष, both of which are alien to the *Bhedojjīvana*.

58. *Advaitadīpikā* of Nṛsiṃhāśrama, in 2 Vols., Medical Hall Press, Benares. 1919. Cf. Pariccheda II, p. 3, 4 (तत्र नवीनः) with Nym. II, 17, p. 567-8 (Bombay Edn.) ; p. 5 with Nym. 571-2 ; p. 7 with p. 573 ; p. 9 with p. 574 f. and 587 ; p. 15 with p. 589 ; and p. 16-18 with p. 589 f.

59. अब्दे वेदवियद्रसेन्दुगुणिते

पौषासितश्रीदिने ।

रक्षो नामनि पूरुषोत्तमपुरे

ग्रन्थं मुदाचोकरत् ॥

(India Office Catalogue IV, p. 761,

Nos. 2379-80).

PRE-INDO-EUROPEAN

By SUNITI KUMAR CHATTERJI.

Sir William Jones laid the foundation to Indo-European linguistics with his epoch-making pronouncement in the year 1786 before the Asiatic Society of Bengal in Calcutta :

The Sanscrit language, whatever be its antiquity, is of wonderful structure, more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either ; yet bearing to both a stronger affinity, both in the roots of verbs and in the forms of grammar, than could have been produced by accident ; so strong that no philologer could examine all these without believing them to have sprung from some common source, which perhaps no longer exists. There is a similar reason, though not quite forcible, in supposing that both Gothick and Celtick, though blended with a different idiom, had the same origin with the Sanscrit.

"Some common source, which perhaps no longer exists" : since the first attempt on the part of Franz Bopp in 1816, thirty years after Jones's pronouncement, to raise the structure of Indo-European linguistics, by his "Üeber das Konjugationssystem der Sanskritsprache in Vergleichung mit jenem der griech., lat., persischen und germanischen Sprachen," after Colebrooke and Foster had published their Sanskrit grammars from India, Alexander Hamilton had taught Sanskrit to Friedrich Schlegel in Paris, and F. Schlegel and his brother Adolf had introduced Sanskrit into Germany (the former by his famous work "Üeber die Sprache und Weisheit der Inder", 1808), it has been the steady objective of four generations of scholars in Europe, and then in America, to rediscover that "common source" which no longer existed. All the Indo-European languages, in both their most ancient and later forms, were studied in detail ; and bit by bit, from discovery to discovery, the science advanced, and finally by the close of the 19th century it was possible for it to postulate the hypothetical Indo-European source-speech which as the ancestor of Vedic, Avestan, Greek, Latin, Gothic, Old Irish, Old Church Slav and the rest, could explain their formation and their anomalies. Bopp, Grimm and Rask were followed by Pott, Schleicher, Benfey, Fick, Bezzenger, Kuhn, Scherer, Curtius, and Johannes Schmidt, and then by the "Junggrammatiker" or Linguistic Scholars of the New School, viz., Paul, Braune, Sievers, Karl Verner, Osthoff, Brugmann, Hübschmann, de Saussure, Jolly, Schulze, Kretschmer and Delbrück in Germany, and Fortunatov, Ascoli, P. Giles, A. Noreen, Uhlenbeck, Antoine Meillet and others in other

European countries ; and we have the most recent scholars in the field, H. Hirt, A. Thumb, F. Sommer, H. Reichelt, R. Thurneysen, Mikkola, Leskien, Oertel, Walde, Pokorny, Streitberg, Gauthiot, Prokosch, Sapir, Kent, Sturtevant, Buck, and a number of others, in Germany, France, England and other countries of Europe, and America, who are engaged in working out the "common source" of the Indo-European speeches envisaged by Sir William Jones. Thanks to their labours, with the existing linguistic materials furnished by the Indo-European languages which are current either as living languages or as classical or older languages the study of which has remained unbroken or has been revived, we have now been enabled to form a clear idea of the source-form of these—of the Primitive Indo-European Speech, as a single and undivided language (with such dialectal differences as are present in all languages). The reconstruction of Primitive Indo-European, particularly in its sounds and inflexions, is one of the greatest achievements of the human intellect during the past one hundred years. We have been enabled by it to arrive, with the greatest amount of probability possible under the circumstances, at the nature of Indo-European sounds and forms, as they were in the language as current among the original Indo-European speakers in their problematic home ("somewhere in Eurasia") some five thousand years ago. This reconstructed hypothetical source-speech now forms the *terminus ad quem* we can take back the story of a particular Indo-European language, or of all the Indo-European languages in general. We are now in a position to refer the sounds and inflexions of a language like Sanskrit, Greek, Russian or Albanian to their source-forms in Primitive Indo-European, and can juxtapose the former with the latter as mutually complementary speech material. A number of lost Indo-European languages have been discovered from Central Asia during the last decade of the 19th century and the first decade of the 20th,—Sogdian and Old Khotanese, both of which belong to the Iranian section of the Indo-Iranian (Aryan) branch of the Indo-European family, and Old Kuchean or Tokharian, which forms a new and a separate branch by itself in the family, with greater agreement in certain matters with Celtic, Italic and Germanic and Slav and Armenian of the west rather than with its next-door neighbour Indo-Iranian. Ancient languages like Venetian, Phrygian, Thracian etc., which are found in a few epigraphic remains and in a few words in classical writers have also been studied, and as far as the very meagre specimens have allowed us to do it, they have been found places in the Indo-European family. The discovery and affiliation of these new speeches so far have not affected the character of the hypothetical Primitive Indo-European Language as restored or re-established by scholars.

By 1900, we may say that the Primitive Indo-European Language became re-established through the labours of specialists, and it was believed to have possessed the following characteristics.

In its Phonetic System, in the first instance, it was admitted by all to have possessed the following sounds :

Vowels: Short a, e, o, i, u.
Long ā, ē, ō, ī, ū.

Very short ə, and some indistinct vowels like i, ũ.

Diphthongs, short and long, with the above short and long a (ā), e (ē), o (ō), vowels followed by i and u (i.e. y and w): ai, ei, oi, au, eu, ou, and āi, ēi, ōi, āu, ēu, ōu.

The Vowel System of Primitive Indo-European was a comparatively simple thing. The simple vowels a e o were in a way the nett vowels of the language, and i u as well as the very short vowels had after all a secondary position. Long ī and ū were of secondary origin, being the result of combination of short i and u with a preceding very short vowel ə, itself a modification of a, e, o; while i and u were of consonantal, semivowel origin. Long ā ē ō on the other hand appeared to be the result of the modification of their corresponding short forms, through what is known as *Quantitative Ablaut*, which was probably due ultimately to the working of stress accent in pre-historic Indo-European, when Primitive Indo-European as it stood immediately before its break-up was still being developed. This hypothetical, reconstructed Vowel System so far perfectly explained almost all the facts of vowel phonology in the different Ancient Indo-European languages.

Consonants. The Consonants of Indo-European were reconstructed as follows :

Labials— p, ph, b, bh, m ;

Alveolars or Dentals—t, th, d, dh, n ;

'Palatals' i.e. Front Velars or Front Gutturals—k, kh, g, gh, ñ (sometimes written as \tilde{k} , $\tilde{k}h$, \tilde{g} , $\tilde{g}h$, \tilde{n}) ;

Velars (really Uvulars ?)—q, qh, g, gh, N ;

Labialised Velars—q^w, q^wh, g^w, g^wh, N^w ;

Liquids— r, l ;

Sibilant— s (with z as a modification of s) ;

Semivowls— y, w.

The Liquids r, l and the Nasals m, n, ñ, N, N^w could form syllables without the help of any vowel, and therefore they could function as vowels when a contiguous vowel (a, e, o) was lost through absence of accent. Sanskrit had helped most in establishing the Primitive IE. consonant system, just as Greek helped in the matter of the vowels. In the above system of consonants, stops and their aspirates predominate. There is a total lack of spirants, except the solitary s, which became z in voiced company. Some scholars, however, hold that Prim. IE. possessed some noteworthy spirant sounds as well—e. g. χ, γ, θ, δ, besides a kind of ž; but this view is not generally accepted. There was

no separate *h* sound in Prim. IE. The IE. consonants thus had a definite stop and aspirate predominance; and the language lacked some of the typical sounds of Semitic, e. g. the pharyngals *ħ* and *ʕ* (= *ḥā* and *ʕayn* of Arabic), the glottal stop *ʔ* (= *ḥamza* of Arabic), and the velarised sounds (*tʷ*, *dʷ*, *sʷ*, *ḡʷ* or *zʷ* of Arabic). Like the vowels, the above consonant system also explained perfectly the consonantal developments in the Indo-European languages.

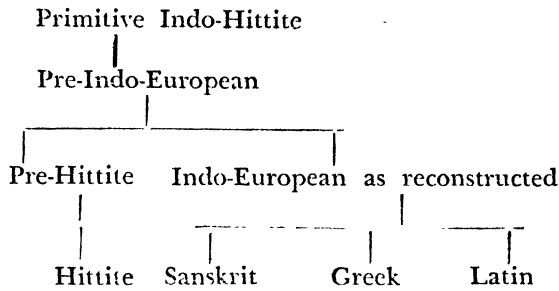
The Morphology of Indo-European as reconstructed showed in the declensional system a general agreement with Vedic, allowing for certain innovations in the latter, but in the conjugation of the verb Prim. IE. as a result of comparison among the various ancient IE. languages pointed towards quite a different state of things from that presented by Vedic. Greek and other IE. speeches of the oldest phase. The Slav branch of IE. rather suggested the line in which verbal inflexion operated in Prim. IE., and the science as well as imagination of present day linguistic scholars have evolved for Prim. IE. quite successfully a hypothetical scheme of conjugation from which the conjugational systems of the ancient Indo-European tongues can be shown to be perfectly understandable developments.

The Primitive Indo-European Sound and Inflexion System thus established formed a crowning achievement of the 19th and 20th century linguistic science. It was firmly established on the rock of the ancient languages, and the caution of modern science had left hardly any weak spot in its structure. But during the second decade of the 20th century, some new facts came up with the discovery of a new Indo-European language, the Hittite, in contemporary documents going back to the middle of the second millennium B.C. in Asia Minor. The existence of this ancient language came to light as early as 1902, when J. A. Knudtzon noted the Indo-European character of the language of two letters in the Pharaonic archives at Tell el-Amarna in Egypt, one of which was sent to the king of Arzawa in Asia Minor by the Pharaoh of Egypt Amenhetep III. (J. A. Knudtzon—*Die zwei Arzawa-Briefe: die ältesten Urkunden in indogermanischer Sprache*: with notes by S. Bugge and A. Torp: Leipzig, 1902). In 1907 Hugo Winckler discovered a whole literature in Hittite in cuneiform characters on clay tablets in the Turkish village of Boghaz-Köi, 90 miles east of Ankara, which is the site of the ancient Hittite capital of Hatusas. Winckler secured "considerable part of the royal archives, including several thousand tablets and parts of tablets." These texts, legal, political, religious and ritualistic, historical, medical, epistolary and relating to training of race-horses, presented to the learned world quite an *embarras de richesse*. The names of the Vedic Gods Mitra, Varuṇa, Indra and the Nāsatyas were discovered in one of the texts by Eduard Meyer. But Hugo Winckler died in 1913, and although with the help of the bilingual texts in the Semitic Assyrio-Babylonian language and Hittite, and from the nature of Hittite writing,

Assyriologists could make out the purport of the texts, yet it was only in 1916 that the Czechoslovakian scholar Friedrich Hrozný was enabled to demonstrate the full Indo-European character of the language (in his *Die Sprache der Hethiter, ihr Bau und ihre Zugehörigkeit zum indogermanischen Sprachstamm: ein Entzifferungsversuch*: Leipzig, 1917). The Norwegian scholar C. J. S. Marstrand followed suit with his *Caractère indo-européen de la Langue Hittite* from Christiania (Oslo), 1918, and in 1922. Johannes Friedrich gave a full sketch of the Hittite language in the pages of the German Oriental Society's Journal (*Die Hethitische Sprache*, ZDMG., Leipzig, 1922, New Series, Vol. I, Part 2, pp. 153-173). Other scholars came with their contributions in the elucidation of Hittite, and Hittite studies passed on to the United States where American scholars have taken a prominent part in this field of linguistic research, one of the most valuable American contributions, apart from other works, being Professor Edgar H. Sturtevant's *Comparative Grammar of Hittite* (1933, Linguistic Society of America, University of Pennsylvania, Philadelphia). Hittite studies are progressing apace, and since Sturtevant's great work of 1933, much additional ground has been traversed by American scholars, and all this has been published in papers contributed to *Language*, the *Journal of the Linguistic Society of America* and to the *Journal of the American Oriental Society*. Hittite studies having during the last twenty years come to the forefront of Indo-European researches, these studies have now entered into the second phase of their history, when the proper relationship of Hittite with the other Indo-European languages has been definitely established by Sturtevant and others; and some of the findings in this second (and by no means final) stage in Hittite studies are proving to be revolutionary for Primitive Indo-European as reconstructed—at least in pushing back the history of reconstructed Primitive Indo-European by some two stages earlier: they are helping us to form a glimpse of Pre-Indo-European, when Indo-European as we have restored it was in the making.

The first study of Hittite revealed its nature as an Indo-European language, but it proved rather disconcerting as it did not fit in with reconstructed Indo-European which explained so perfectly all the other Indo-European languages. A theory had to be formulated that Hittite presented in itself a world apart in the domain of Indo-European—as a matter of fact, Hittite with its peculiarities was looked upon as an early branching off from the Parent Indo-European Stock, with special developments of its own. But it gradually began to dawn upon workers in this field that these developments presented by Hittite were not aberrations due to contact with other speeches, but developments from an earlier stage which must also take note of Indo-European as reconstructed; and Sturtevant and others finally came to the position that Hittite represented not a descendant of Indo-European like Sanskrit, Greek, Latin and the rest, but rather it was a sister of Indo-European: Indo-European being from this point of view, a sister of Hittite, and Hittite was, so to say, an aunt or a cousin of an Ancient Indo-European.

pean language like Sanskrit, Greek or Latin. The hypothetical common source of Hittite and reconstructed Indo-European has been named by Sturtevant "Indo-Hittite", and the relationship has been shown by means of a genealogical table like the following :



This hypothetical Indo-Hittite has not yet been universally accepted by scholars, but judging from the most recent trends of Hittite studies, it would appear that there is no other alternative but to take one more step back into the unknown, behind Primitive Indo-European ; and the soundness of this step has to be admitted when we find that it takes us to a more primitive stage than Indo-European, explaining a good many apparent anomalies and irregularities in it. By the creation or reconstruction of Indo-Hittite, another big advance has been made in unravelling the origins or early history of the most important language family of the world—the Indo-European.

Let us see how this Pre-Indo-European Primitive Indo-Hittite stands.

First, in the matter of the *Sounds*. Hittite was found to possess, so far as the various stops and aspirates were concerned, only a solitary unvoiced stop in place of the four in each group—the two unvoiced stops and aspirates, and the two voiced forms of these : only a *k* for *k*, *kh*, *g*, *gh* ; only *t* for *t*, *th*, *d*, *dh* ; only a *p* for *p*, *ph*, *b*, *bh*. There is nothing strange or remarkable in this : many languages show a similar poverty in stops and aspirates. The absence in Hittite of the aspirates and of voiced stops does not in the least influence our assumption of these in Indo-European ; in Indo-Hittite, we have to assume their existence as much as in Indo-European itself—the Hittite change being confined to that branch of Indo-Hittite only. Indo-European guttural sounds were found to fall in these groups— (i) the so-called 'Palatals', just simple *k*, *kh*, *g*, *gh* ; (ii) the so-called 'Velars', which were probably Uvulars : *q*, *qh*, *g*, *gh* ; and (iii) the Labialised Velars—*q^w*, *q^wh*, *g^w*, *g^wh*. The evidence presented by Hittite would appear to suggest that the position for Pre-Indo-European, for Indo-Hittite, was slightly different. It would appear that the Indo-Hittite gutturals were in two sets—(i) ordinary 'Velars' (or Uvulars)—*q*, *qh*, *g*, *gh* ; and (ii) those with labialisation, or an accompanying

w or u quality—q^w, q^{wh}, ɕ^w, ɕ^{wh}. The ordinary group of gutturals q, qh, ɕ, ɕh appears to have split up into two groups in Indo-European—a group where they became more advanced in pronunciation through contact with front vowels—were ‘palatalised’, so to day : and the labialised gutturals retained their original quality. But it is believed that the proper distribution of both these modified groups of the gutturals (k, k_h, g, gh) and the primitive labialised set (q^w, q^{wh}, ɕ^w, ɕ^{wh}) was much disturbed in Pre-Indo-European and in Primitive Indo-European by analogy : the three new sets, or newly arranged sets of gutturals in Indo-European as reconstructed present an apparently regular array, but there are many anomalies which the investigation of Hittite alone appears to solve.

Very important is the question of h (=χ) in Hittite. It was found that in many words and forms Hittite shows a guttural spirant sound χ, written h, where the Indo-European languages have nothing : e. g. Hittite arχa ‘away’ = Skt. āré ‘after’, ārāt ‘from’; Hit. esχar = Skt. áśṛk, Gk. éar ‘blood’; χants ‘front’, χanti ‘in front, especially, separately’. χantetsis ‘first’ = Gk. antí ‘opposite’, ánta ‘face’; χarkis ‘white, bright’ = Gk. árgos ‘shining’, Skt. árjuna ‘white’; χastai ‘bones’ = Skt. ásthi, Gk. ostéon, Lat. os ‘bone’; χwestsi ‘lives’ = Skt. vásati ‘tarries, dwells’; χwrtai ‘curses’ = Lat. verbum, Gothic waúrd (wórd) ‘word’, = IE.*werdhom; sxai ‘empties, sprinkles’ = Gk. húei ‘it rains’; etc. Moreover, in a few words, it is found that Hittite has short vowel + h (i.e. χ, or some modification of it) + consonant, whereas Indo-European shows long vowel and consonant (e.g. Hittite maχlas ‘branch of grape vine’, = Gk. Doric mālon ‘apple’; Hit. meχweni ‘time’ = Indo-European *mē-t-, whence Skt. mātrān, Gk. métron; etc.) This appeared to confirm what Ferdinand de Saussure of Geneva, one of the creators of Indo-European linguistics, had suggested as early as 1879, viz. that IE. long vowels not due to Ablaut (Vowel Gradation according to laws of accent) were the result of the loss of certain following consonants.

From this disconcerting h (i. e. χ) of Hittite, certain other sounds in Primitive Indo-Hittite, not envisaged in Indo-European, are being arrived at. Sturtevant, and J. Alexander Kerns and Benjamin Schwartz have assumed the existence in Indo-Hittite of *four new sounds* not present (or preserved) in Indo-European (see “The Laryngeal Hypothesis and Indo-Hittite, Indo-European Vocalism” by Kerns and Schwartz, *Journal of the American Oriental Society*, Yale University Press, Vol. 60, 1940, pp. 181-192; and E. H. Sturtevant, “Evidence for Voicing in Indo-Hittite γ”, in *Language*, *Journal of the Linguistic Society of America*, Vol. 16, no. 2, April-June 1940, pp. 81-87). The *Laryngeal Hypothesis* is something of capital importance in connection with the evolution of Indo-European. It has become necessary to assume *Four Guttural Spirants*

in Indo-Hittite (cf. Kerns and Schwartz as referred to above ; Sturtevant in his articles in *Language* mentioned above thinks that two of these four sounds are glottal stops, one of 'palatal colour' and the other of 'velar colour', and two velar spirants, one a voiced γ and the other an unvoiced χ). These were as follows. (the symbols I have used are more in accordance with wider usage in this matter, and the terms employed are also my own, seeking to make Kerns and Schwartz's theory appear in a more familiar garb) :

1. χ' —a voiceless velar spirant, advanced ('palatalised').
2. γ' —a voiced " " " "
3. χ — voiceless velar spirant, purely velar (or uvular).
4. γ —a voiced " " " "

(I should not call χ' γ' "palatal spirants" = [ç j] of the International Phonetic Script, as such palatal spirants would be too early for Indo-Hittite).

With the assumption of the above four sounds in Indo-Hittite, not only has Hittite and Indo-European connexions been made clear but also a new vista has been opened up in reconstructing the pre-history of Indo-European. Certain fundamental matters in Indo-European vocalism and consonantism have been given a new and apparently a more reasonable explanation. The oldest stage of Indo-Hittite (taking the language back to 4000, or 5000 B.C. ?) could only be expected not to have a varied vowel system, and early human speech can be reasonably expected to be rich in guttural consonants and guttural grunts, which would have their influence on the meagre or restricted vowel system : and the advanced or receded quality of the guttural spirants can easily affect the timbre of the vowels, turning a neutral or a guttural vowel into a palatal one, and *vice versa*. The situation as suggested for Primitive Indo-Hittite and for the subsequent development in Hittite and Indo-European is as follows :

Primitive Indo-Hittite	>	Indo-Hittite	>	Hittite, Indo-European
(i) $\chi'e$ -	>	$\chi'e$	>	e, e
$\gamma'e$ -	>	$\gamma'e$	>	χe e
χe -	>	χa	>	χa , a
γe -	>	γa	>	' a, a
(ii) - $\chi'et$ -	>	- $\acute{e}it$ -	} —	- $\acute{e}t$ - - $\acute{e}t$ -
- $\gamma'et$ -	>	- $\acute{e}it$ -		
- $\chi\acute{e}t$ -	>	- $\acute{e}it$ -		
- $\gamma\acute{e}t$ -	>	- $\acute{e}it$ -		
(iii) - $\chi't$ -	>	- $\chi't$ -		- $\acute{e}t$ - - $\acute{e}t$ -
- $\gamma't$ -	>	- $\gamma't$ -		- χt - $\acute{e}t$ -
- χt -	>	- χt -		$\acute{a}t$ $\acute{a}t$ -
- γt -	>	- γt -		- χt - $\acute{e}t$ -

(iv) te'x'e	>	tX'e	>	te	the
de'x'e	>	dX'e	>	te	te
te'γ'e	>	tγ'e	>	te	de
de'γ'e	>	dγ'e	>	te	dhe
teXe	>	tX.a	>	ta	tha
dexe	>	dγa	>	ta	ta
teye	>	tγa	>	ta	da
deye	>	dγa	>	ta	dha
(v) -eX'e	>	-eX'	>	-ē	-ē
-eγ'e	>	-eγ'	>	-ē	-ē
-eXc	>	-aX	>	-ā	-ā
-eγe	>	-aγ	>	-ā	-ā

Examples have been adduced by Kerns and Schwartz to illustrate all above sound changes. Aspiration of consonants and modification of vowels in the root in IE. would thus appear to be based, partially at least, on the presence and behaviour of these guttural spirants ("the Laryngeals").

The Consonant System of Pre-Indo-European Indo-Hittite, therefore, is reconstructed as follows :

Stops and Aspirates—Velars (really Uvulars)—q, qh, c, ch (N) ;

Velars (") with lip rounding, or w/u quality—q^w, q^wh, c^w, c^wh (N^w) ;

Dentals or Alveolars—t, th, d, dh, n ;

Labials—p, ph, b, bh, m ;

Spirants—Advanced ('Palatalised') Gutturals—X', γ' ;

Guttural Spirants (Velars, Uvular)—X, γ ;

Sibilants—s, z.

Liquids—r, l (r is never initial in Indo-Hittite).

Semi-vowels—y, w.

The nasals also functioned as sonants, same as in Indo-European. As regards Vowels, nothing definite has been established so far for Indo-Hittite : the original Indo-Hittite Vowel System has not been satisfactorily made out. Possibly it did not differ much from that of Indo-European, but there is no doubt that Indo-European Ablaut and the Indo-European Vowel System were in the making in the Indo-Hittite stage, and the Vowel System was in all likelihood comparatively meagre, the 'advanced' and the normal spirants beginning to affect the quality of the vowels.

In Indo-Hittite two dental stops side by side developed a sibilant between them : tt, tth, dd, ddh gave tst, tsth, dzd, dzdh. IE. partly hints at this state of things. Hittite has preserved it regularly.

Phonetics is the basis of language, and the study of Chinese Phonetics and

Phonology has revealed an unexpected situation for Ancient and Archaic Chinese—it was an inflected language originally, and became isolating in later times through loss of sounds. The nature of Indo-European in its pre-historic and formative period has been similarly revealed to be something different from reconstructed Indo-European. Intensive study of Indo-European Ablaut as a phonetic phenomenon and of the formation of root bases by extension (i.e. by adding fresh formative elements) was disclosing gradually the complications that are behind the “root” in Indo-European. Hittite has widened the horizon for Indo-European. The Indo-Hittite group $\gamma'w-$ becomes $\chi w-$ in Hittite, and simple $w-$ in Indo-European: the Primitive Indo-Hittite root was $*\gamma'ewe-$ ‘be in a state of motion, move, live,’ whence we have Hittite $\chi u w a i-$ ‘grow; go;’ with $s-$ extension, it became $*\gamma'we-s-$, = Hittite $\chi w e s$ ‘live’ and Indo-European $*w e s$ = Sanskrit $vásati$, Gothic $wis-an$; with prefix $*be-$, it gave Indo-Hittite $*be-\gamma'ewe-$, extended to $*be\gamma'ewā$, whence we have Indo-European $*bhewe-$, $bhewā$ = Sanskrit $bhava$, $bhavi-$, $bhū$, English be ; so that in New English we have not a suppletive paradigm, but the same root with diverse formatives. (Kerns and Schwartz, article referred to before, p. 185, foot-note 8). Comparative Linguistics of Indo-European and Hittite thus presents before us a strange and a new world: but a world which fits in with Indo-European as arrived at by a century of linguistic research. The root formatives and extensions now take a greater importance than ever in the evolution of Indo-European.

Some of the salient points in Indo-Hittite *Morphology* which can be deduced from Hittite may be noted.

Hittite is probably faithful to Indo-Hittite is not having developed the habit of forming compound words made up of two or more nouns. Indo-European in this matter evidently made a great advance on Indo-Hittite. On the other hand, the lavish scale in which reduplication features in Hittite in the formation of both nouns and verbs would suggest that Indo-Hittite too in this matter was more fecund than Indo-European, in which reduplication, however, continues to retain an important place.

There is a fairly large number of formative suffixes in Hittite, equivalents of which are found in most cases in the different Indo-European languages. The number of prefixes is exceedingly limited: $sa-$ < Indo-Hittite $*s\eta$, found in Skt. and Gk., and $\chi a-$ < Indo-Hittite $*\chi a$, found in Greek.

In the Declension of the Noun, the situation as arrived at in Indo-European would appear on the whole to hold good for Indo-Hittite as well. Hittite has two genders, an animate (including masculine and feminine, which are not differentiated) and an inanimate (or neuter). The feminine gender, it has been clearly established, did not occur in Primitive Indo-European,—it was developed independently in the different ancient Indo-European speeches. So far as the indication of number is considered, there are traces of the dual (e.g. $\chi a s a$

Xatsasa 'grand-child (and) great-grandchild', which corresponds to Sanskrit *devatā-dvandva* compounds (like *Mitrā* or *Mitrā-Varuṇā* = 'Mitra and Varuṇa'; cf. Gk. *Aíante* = 'the two Aias, or Ajaces'). The plural is in wide use, and the affixes agree with those of Indo-European in some cases, in others they appear to be peculiar to Hittite and may be innovations. The Indo-European character of the noun inflexion is fully represented in Hittite, and most Hittite case forms have their counterparts in the ancient Indo-European languages. As a typical Hittite paradigm, the declension of a masculine noun ending in -a (= -o of Indo-European) may be quoted :

	Sg.	Pl.
Nom.	antuXsas 'man'	-antuXsēs
Acc.	antuXsan	-antuXsus
Instr.	[antuXset]	----
Loc. Dat.	antuXse	----
Abl.	antuXsas	antuXsās
Gen.	[antuXsas]	

The inflexions as above are mostly comparable to those of Indo-European. The use of the same form for nominative and genitive in -a (= IE. -o) stems is noteworthy : we find one or two traces of it in Sanskrit (e.g. *sūrē duhitā* from **sūras duhitā* = 'daughter of the sun'). A noteworthy group in the declinational system of the noun in Hittite is presented by the r/n- stems (e.g. nominative sg. *utar* 'water', gen. *utanas*; *esXar* 'blood', gen. *esXanas*; *stamar* 'ear', gen. **stamanas*; *kutar* 'neck', gen. **kutanas*; *paXur* 'fire', gen. *paXunas*; cf. Skt. heteroclitic nouns : *aṣṭ-k* 'blood', gen. *asnas*; *yakṛ-t* 'liver', gen. *yaknas*; Latin *iecur* 'liver', gen. *iecinoris*; Gk. *hēpar* 'liver', gen. *hēpatos*. The declension of the noun in Indo-Hittite would appear to have been much less complicated than in Indo-European.

For the Pronoun, comparison of Hittite with Indo-European has enabled Sturtevant and others to conclude that Indo-Hittite possessed but a meagre set of pronominal forms, to wit :

First Person.		Second Person.		Third Person.
Sg.	Pl.	Sg.	Pl.	Sg.
Nom. *eg	*weis	*tē	—	--
Obl. *īme, mē, moi	*ʔs, nos	*twe, toi, tū,	usme	soi.

On this basis Hittite built up a regular paradigm for the first and second persons. Enclitic pronouns occurred in Indo-Hittite as much as in Indo-European, and, besides, Hittite possessed some enclitic possessive pronouns which are not found in Old Indo-European languages, but which nevertheless may have been inherited by them from Primitive Indo-European and ultimately Indo-Hittite—for these enclitic possessives are found in some later Indo-European

languages, e.g. Persian. The Demonstratives, and the Indefinite, the Relative and the Interrogative Pronouns are found in Hittite, and the bases in all cases can be connected with corresponding pronouns in the different Indo-European languages. Some of these are not presented in Indo-European as pronoun forms: e.g. Hittite *apas* 'that', which appears to be connected with the Indo-European **obhi* 'to, towards' (Skt. *abhi*, Lat. *ob*).

In the Conjugation of the Verb we get in Hittite plenty of glimpses of an earlier state of things than in Indo-European. There are to start with a number of 'separable prefixes' (= *upasargas* of Sanskrit) which modify the meaning of the verb-base; some of these are identical with Sanskrit, Greek and other Indo-European prefixes: e.g. *apa* = Gk. *apó*; *anta* = Old Lat. *endo*; *awan* = Skt. *ava*; *xanti* = Gk. *antí*; *kata* = Gk. *katá*; *pra* = Skt. *pra*, Gk. *pro*; etc.

Reduplication is fairly common in the Hittite verb root in the intensive sense (e.g. as in Skt. desideratives and frequentatives), but it is unlike Sanskrit reduplication in the perfect.

"The Hittite verb has two moods (Indicative and Imperative) and two tenses (Present-Future and Preterit). There are two infinitives, one nearly always active and the other usually intransitive, a participle that is regularly intransitive, a supine that combines with *tai*- 'place', to mean 'begin and continue the action of the verb', and verbal nouns of two types. There are two secondary conjugations, one causative and the other iterative-durative. Finally, there is a compound perfect and its preterit consisting of the neuter of the participle with the two tenses of the auxiliary verb *har(k)*- 'have'. There is a medio-passive voice which may differ from the active in being reflexive or passive or in implying some particular interest on the part of the subject, but which often appears to be equivalent to the active." (Sturtevant, p. 216).

The above system has a general affinity with Indo-European, but Hittite from its verb system would appear to have been cut off from the main body of Indo-Hittite (or Indo-European before the verb-system in the latter started to take its definite shape). Hittite roots fall under one or the other of two great types in the matter of conjugation: the *-mi*- Conjugation, and the *-x*- Conjugation, in the Active Voice (the Conjugation for the Medio-passive is different). The *-mi*- Conjugation corresponds roughly to the Indo-European present and aorist systems, athematic and thematic. Roots which come under this are either athematic, presenting a fairly large class which became considerably curtailed in Indo-European, or thematic; and roots of these thematic classes are derivative forms with extensions of the original root by means of affixes (= *vikaraṇas*, as they are called in Sanskrit). In Hittite these are *-iya*, *-a(e)*, *-s*, *-es*, *-n* (nasal infix), *-no*, *-ske/a*. Indo-European, however, shows many more: but these of Hittite are found also in Indo-European. The affixes for the present tense of the *mi*- class correspond to those for the present and aorist of Indo-European;

and this lack of distinction between the affixes of the present and the aorist as implying diversity of time—present and past—appears to have been inherited by Hittite from Indo-Hittite—Indo-European specialised or narrowed down the aorist to the past sense. The preterit of the *mi*-Conjugation corresponds to the imperfect of Indo-European (= *lañ* of Sanskrit), but the affix for the 3 pl, is from the Indo-Hittite perfect.

The *χi*-Conjugation includes three groups of verbs: (i) those with consonant stems, including Primary Verbs, Denominative Verbs in *-aχ*, and Derivative Verbs in *-χ*; (ii) those with *a*-stems—including Primary Verbs, and Derivatives in *-na* and *-sa*; and (iii) Verbs with diphthongal stems. “The present of the *χi*-Conjugation corresponds in general to the IE. perfect (= *lit* of Sanskrit), but with considerable influence from forms that in Indo-European grammar are called present or aorist.” (Sturtevant). The preterit of the *χi*-Conjugation is a composite of forms corresponding to IE. aorists, and new creations.

The Hittite Medio-passive corresponds to the Greek Middle Voice—the Skt. *ātmānēpada*. It has two tenses, present-future and preterit in the Indicative, and it has also the Imperative, and Participle, and Verbal Noun. The formation is along the lines of the active, but there are special personal endings.

In the Conjugation, Hittite has no dual—only singular, and plural, but the three numbers are found.

Hittite appears to have developed at least three periphrastic forms—a participle with the verb *es* ‘to be’, to denote the past or perfect, and similarly the neuter participle with *χar(k)* ‘have’ for the perfect, beside the supine in *-wan* with forms of the verb *tai* ‘to place’ to denote the beginning and continuance of an action.

A few Paradigms will indicate the situation for Hittite:

(A) *mi*-Conjugation.

	Indicative	Imperative
Present	Preterit	
et ‘to eat’:		
1. etmi—atweni	1. *etun—*etwen	1. ———
2. *etsi—atsteni	2. *ets—*etsten	2. et—*etsten
3. ettsi (< etti) —atantsi	3. etst—eter	3. *etstu—*atantu
Participle: atants.	Infinitive—*atantsi.	
Supine —*etwan.	Verbal Noun—*etwar.	

(B) *χi*-Conjugation:

sak ‘to know’:

1. sakχi—sekweni	1. *sakχun—sekwen	1. ———
2. sakti—sekteni	2. sakta—*sekten	2. sak, saki—sekten

3. saki—sakantsi 3. sekt, saks—seker 3. saktu—sekantu
 sekants ; *sekwantsi ; *sekwant ; *sekwar.

(C) the Medio-Passive :

ya 'to go' :

1. ———*yawasta	1. yaχat, yaχaχ'at—X	1. ———
2. yata—yatuma	2. *yaat, *yatat—*yatumat	
		2. *yaχut—yatumat
3. yata—yanta	3. yatat—yantat	3. ———
Participle—*yaants.	Verbal Noun—*yaatar.	

The above conjugation on the face of it appears to be remarkably simple. The personal terminations have their IE. affinities, and connexions with IE. forms have been discovered. Very noteworthy is the use of the forms in -u for the Imperative in the 3rd person, which is found in Indo-Iranian (Sanskrit, Avestan, Old Persian). The -r form in the preterit in the active conjugations (mi- as well as χi-) is connected with the r in the perfect, as in Skt. -ur (ūcur, cakrur), Avestan -arə and Latin -ēre. This is found also in Tokharian. In the Medio-Passive there are in Hittite some inflexions with -r (-tari, -ntari, 3 person sg. and pl. not noted in the paradigms given above), and these have been connected with the similar Italic, Celtic and Tokharian forms.

It appears that Hittite inherited elements from the Pre-Indo-European—from Indo-Hittite in fact,—before the Conjugation could become crystallised into what we find in late Primitive Indo-European, immediately before its break-up.

Thus Hittite has enabled us to formulate our views about pre-historic Indo-European: it has enabled us to adventure still further beyond in unravelling the origins of the Indo-European speech.

The hypothetical Indo-Hittite in the process of reconstruction has allowed us legitimate speculation about the origins of Indo-European in both its sounds and forms, but it has not given us as yet any clue as to the time and place for Primitive Indo-Hittite as the ultimate source of Indo-European. Linguistic Palæontology for Indo-Hittite appears not yet to have been taken in hand; but we may hope ere long to be informed, from a sifting of the linguistic material now providentially placed at our disposal and put to good use by competent scholars, about the topographical and cultural *milieu* of the people among whom Indo-Hittite became characterised—whether in the Ural Regions, in Central Asia, or in Iran, or in Asia Minor.

THE AGE OF THE CĀHAMĀNA PṚTHVĪRĀJA III.

By H. C. RAY

The accession of the Cāhamāna Pṛthvīrāja III (c. 1179-92 A.D.) to the throne of Śākambharī brings us to the beginnings of a new period in Indian History. During the period c. 600 to 1100 A.D., roughly a period of five hundred years, the main political currents of India had swirled round the turrets of Kānyakubja. The capital of the ambitious Maukharis (c. 554-600 A.D.) had gradually grown into a huge "city of ten thousand temples", protected by "seven distinct forts washed by the Ganges, which flowed under them like the ocean". Muslim writers describe Kanauj as 'the capital of India, the Ka'aba of the Shamans and the Kibla of the Kafirs'. 'All the treasures of India, we are told 'go to this city as the small streams pour into a large river'. It had numerous armies, wealth and countless weapons and elephants. Imperial power and the possession of this city became almost synonymous. Even its weakest rulers had been described by reliable foreign historiographers as "the chief of all princes in India." Antarvedi, bounded by the holy streams the Jāhnavī and the Kālindī, and its queen the Imperial city of Kānyakubja, practically became the centre of political gravity in India. During these five centuries of chequered and strenuous existence Kanauj passed through many vicissitudes. The poetry of Bhavabhūti, Vākpatirāja and Rājaśekhara, the tramp of swift moving cavalry and clash of arms of the legions of Lalitāditya and Vinayāditya, Dharmapāla and Devapāla, Govinda and Indra, Nāgabhaṭa and Bhoja, Maḥmūd and Vidyādhara, the learned discourses of the Chinese Master of the Law and the prose romances of Bāṇa kept the eyes of India riveted upon the Antarvedi and its imperial city. Thus Kanauj and its rulers gradually acquired in a lesser degree the same position in India which was assumed by Rome and its Caesars in ancient times or by Bagdad and its Caliphs in the Mediaeval world.

During the five centuries noted above, Kanauj remained the metropolis of four empires. But with the end of the 10th and the beginning of the 11th century new forces appeared on the Indian horizon. While the imperial organization of Kanauj began to decline

* Read before the fifth session of the Indian History Congress held at Hyderabad (Deccan) in December, 1941.

and the limits of its empire shrank, the sturdy Turks appeared on the North-western frontier carrying the Islamic flag and the seeds of uncompromising Semitic civilization. The rulers of Kanauj, at this crisis of Indian History, failed miserably to guard the gateways of India against foreign invasion. While Dhaṅga and Vidyādhara, Muñja and Bhoja, Gaṅgeya and Karṇa, Bhīma and Someśvara fought and struggled for the crown of Imperialism, the forces of Islam crossed the outer defences of India and took possession of the Punjab. The Gāhaḍavālas inherited the imperial traditions and the legal claims of their predecessors in Kanauj. They were rightly proud of their possession of the Imperial city and the most vital areas of the religious and cultural life of India. But they had neither the strength to enforce their legal claims of hegemony nor the power to defend the Delhi gate-way.

Thus when the Muslims, stepping over the carcass of the valiant Śāhi Dynasty of the Punjab, threatened to burst upon the Madhyadeśa and when the Indian princes, taking advantage of the weakness of Kanauj, fought amongst themselves for supremacy and failed to produce either a Candragupta or an Indian Themistocles, a new power arose in Rajputana which made heroic efforts to save India from Islamization. These were the Cāhamānas of Śākambharī (Sambhor). While the rapid decline of the Yamīnīs, the successors of Maḥmūd of Ghaznī, gave a breathing space to India, the Cāhamānas captured Delhi and the land between the Jumna and the Sutlej. They repeatedly defeated the Muslims, and Vighraharāja (c. 1153-64 A.D.), one of their princes, claimed that he had made *Āryāvarta* "once more the abode of the *Āryas*". By this conquest, the Cāhamānas became the guardians of the western gate to the Gaṅgā-Yamunā valley. They also by this achievement and in natural fulfilment of their ambition became the foes of the Gāhaḍavāla emperors of Kanauj and Benares. The success of the Cāhamānas unfortunately synchronized with the rise of a new Muslim power which gradually issued out of the hills of Ghūr. Before the Cāhamānas could sufficiently consolidate their position, Mu'izzud-Dīn Muḥammad ibn Sām had conquered Peshawar in 1179 A.D. and Lahore in 1186 A.D. The Cāhamānas, by virtue of their geographical position and their claim to be the real protectors of the *Āryas*, had to bear the first shock of attack by this Muslim power.

From Prthvīrāja I (c. 1105 A.D.) to Prthvīrāja III (c. 1179-92 A.D.), the Cāhamāna power had grown continuously. With the removal of the last of the Yamīnīs, Khusrāu Mālīk Tāj ud-Daulah (c. 1160-86 A.D.)—the Ghūrī and the Cāhamāna stood face to face. "The Muslim knew that the untold wealth of the rich cities and temples of the sacred Ganges-Jumna valley and beyond could only be secured

by the destruction of this Hindu power which held the key to the Delhi gate. The Cāhamāna knew, and expected no quarter."

The records of this period indicate that Pṛthvīrāja III was the most important figure on the Indian political stage during the last quarter of the 12th century. "His dominions included most of modern Rajputana and extended roughly from the Sutlej to the Betwa and possibly to the Ken, skirting the river Jamuna on the North. The activities of the Caulukyās were paralysed by intrigue and dissensions, while the Senas and the Gaṅgas were far distant from the North Western frontier of India. By his victories over the Candellas and the Gāhaḍavālas and his command over the cis-Sutlej districts, he had constituted himself the main barrier against the advance of the Turks from the Indus Valley."¹ If the Yaminīs could have held the new body of the Muslims for a little more time, there was every possibility that Pṛthvīrāja would have replaced the Gāhaḍavālas and founded the fifth Kānyakubja Empire.

In this work of building up a strong political and military power Pṛthvīrāja was assisted by a number of able officers. The *Pṛthvīrāja-vijaya* contains the names of two such officers. These were Kādamba Vāsa² and Bhuvanaikamalla. "While Kādamba Vāsa is compared with Hanumān, Bhuvanaikamalla is described as a veritable Garuḍa, who served Pṛthvīrāja and his brother Harirāja, the two incarnations of Rāma and Lakṣmaṇa. 'Just as Rāma, with the help of Garuḍa and Hanumān crossed the sea and did other things, so Pṛthvīrāja, with the help of Hanumān-like Kādamba Vāsa and Garuḍa-like Bhuvanaikamalla, did many things for the welfare of the people'³." Another officer Govinda⁴ is mentioned by Muslim and some Hindu records. The *Ṭabaqāt-i-Nāṣirī* seems to indicate that he was in charge of the frontier city of Delhi. In fact he appears to have been the most important of the Wardens of the Marches of the Cāhamāna empire. It was his special task to keep a vigilant watch on the Sutlej and guard the Delhi-gate from the marauding Turkish hordes. In the first battle of Tara'in (1191 A.D.) he led the van of the Cāhamāna army and was mainly responsible for the victory of Pṛthvīrāja over Mu'izz ud-Dīn Ghūrī. The *Ṭabaqāt-i-Nāṣirī* gives the following description of this battle:—

"When the ranks were duly marshalled the Sultān seized a

1. Ray, *Dynastic History of Northern India*, Calcutta University Press, (DHNI), Vol. II, 1217.

2. *Ibid*, p. 1083 fn. 3. The name is sometimes given as Kadamba Vāma.

3. DHNI, Vol. II, p. 1083.

4. *Ibid*, p. 1088, fn. 2. Some authorities give the name as 'Kandi Rai' (TA), or 'Chawund Ray' (TF).

lance and attacked the elephant on which Govind Rāe, Rāe of Delhī, was mounted, and on which elephant he moved about in front of the battle. The Sultān-i-Ghāzī, who was the Haidar of the time, and a second Rustam, charged and struck Govind Rāe on the mouth with his lance with such effect that two of that accursed one's teeth fell into his mouth. He launched a javelin at the Sultān of Islām and struck him in the upper part of the arm and inflicted a severe wound. The Sultān turned his charger's head round and receded, and from the agony of the wound he was unable to continue on horseback any longer. Defeat befell the army of Islām so that it was irretrievably routed, and the Sultān was nearly falling from his horse. Seeing which a lion-hearted warrior, a Khalj stripling, recognized the Sultān and sprang up behind him, and, supporting him in his arms, urged the horse with his voice, and brought him out of the battle. On the Musalmān forces not seeing the Sultān, lamentation broke from them, until they reached a place of safety where the defeated army was safe from pursuit by the infidels".⁵

This valiant officer was slain when Prthvīrāja III was defeated and killed in the second battle of Tara'in (1192 A.D.).⁶ Recently attention has been drawn⁷ to another officer of the great Cāhamāna ruler. Information about this officer is contained in a work called *Viruddha-vidhi-viddhamśa* of the great *Smārta* Lakṣmīdhara and the facts may be briefly tabulated as follows :—

5. DHNI, II, p. 1088.

6. DHNI, II, 1090.

7. IHQ, Vol. XVI, 1940, pp. 567-73.

Sthāneśvara Nāgara Brāhmaṇa of Ānandanagara⁸ belonging to the Kāśyapa gotra ; famous for his learning (4 *Vedas*, *Tarka* and *Mīmāṃsā*).

In his *anvaya*

Skanda *Sāndhivigrahikāmātya* of Someśvara, lord of Śākambharī.

Soḍha Succeeded to his father's post.

Skanda *Senāpati* of Prṥhvī-rāja : defeated the Turuṣkas.⁹ After Prṥhvīrājā was killed by the Turuṣkas, he placed Hari-rāja on the throne : after some time he entered the *turyāśrama*.

Vāmana *Sāndhivigrahika* to Prṥhvīrāja ; after his brother had entered the 4th stage of life he went to the city of Anahillapāṭaka with two million and two thousand *Drammas*.¹⁰

Malladeva=Śrīdevī Author of *Subhāṣitāvalī* and learned in *Sāhitya* and the *Arthaśāstras* of Kauṭilya and others. Initiated into *Advaitajñāna* by the revered Bodhabhārati. At last being fed up with the *siddhāntas* of the *Smṛti* and *Vedānta*, he composed the *Mahākāvya Apratima-rāma*.

As is usual in such cases, the accounts contain nothing but praise of the achievements of the family of ministers. Like the Bādal Pillar inscription of Gurava Miśra¹¹ and the *Prabodha-candrodaya*¹² of Kṛṣṇa

8. Modern Vadnagar in Baroda State ; sometimes called Ānandapura. See *DHNI*, II, p. 849, 964, 984, fn. 4., etc.

9. Mss. gives *Kuruskan*. 10. Anahillapāṭaka is same as Anhillavāṭka, Anhilla-pāṭaka, modern Anavada about 3 miles from Patan in Gujarat.

11. *EI*, II, pp. 160-67 ; *Gauḍalekhamālā*, pp. 70 ff. (under the name Garuḍa-stambha-lipi). Also *DHNI*, I, p. 300.

12. *DHNI*, II, p. 695 ff.

Miśra, success of princes is said to have been entirely due to the ability and skill of the ministerial family. If one were to compile history only from such accounts then the kings would be reduced merely to automatons or pawns in the art and science of war and administration¹³. But though such writings try to produce exaggerated impressions about the importance of ministers, they usually refrain from writing anything positively insulting to their patrons. The reason is not far to seek. The authors and their families usually lived within the power of the dynasties they served and it was therefore dangerous for them to indulge in such language. But when, as in the present case, the patrons and their family had fallen on evil days and the writer and the family and person of the minister were safe in the capital of a foreign and unfriendly ruler there was no harm in using abusive language about their former patrons while praising themselves. Thus the *Viruddha-vidhi-vidhvamsa* not only makes Prthvīrāja III a worthless ruler who was absolutely dependent on Skanda and Vāmana for his military and administrative success but also paints the great Cāhamāna in very dark colours. We are told that when once the Brāhmaṇa *Senāpati* Skanda was fighting elsewhere, Prthvīrāja, who though alive was as good as dead (*Jīvanmrta*) and steeped in the vice of *Nidrā-vyasana*, was slaughtered in battle by the Turuṣkas. The cause of this bitter attack on the Cāhamāna prince is clear from certain verses of the Sanskrit work cited above. It seems that both Skanda and Vāmana suffered an eclipse due to the machinations of another Nāgara Brāhmaṇa who was jealous of the power and position of the two brothers at the court of the Cāhamāna king. Neither the inscriptions nor the historical records of the Hindus and the Muslims know Skanda and Vāmana as pillars of the kingdom of Prthvīrāja III. The men who really counted were men like Kadamba Vāsa, Bhuvanaikamalla and Govinda Rāya. The retirement of Vāmana with immense wealth to Anahilla-pāṭaka shows that there might be a good deal of truth in the reports about the dishonesty and avarice of the brothers which seems to have brought about their downfall. They did not apparently believe in retiring into honourable poverty after a period of service under the state.

13. Compare the position occupied by Rākṣasa or Cāṇakya and their lords the Nanda or the Māurya princes in the *Mudrā-rākṣasa* of Viśākhadatta,

DRAVIDIAN- & MON-KHMER—SPEAKERS OR AUSTRALIDS?

A STUDY IN VARIATION

By A. K. MITRA & B. K. CHATTERJI.

While discussing the blood-group distributions of the Bengalis on a recent occasion, we had drawn attention to the fact that whereas the South-Indian aboriginal tribes, viz., the Chenchus, Iluvās, the "Pre-Dravidian" tribes of Madras and the Paniyans show a low incidence of B, thus differing from the more northern tribes, viz., the Bhils, Oraons, Mundas, Santals, Māler, Malpaharias and Maria Gonds who exhibit considerably higher percentages of B, the two groups agree in differing considerably among themselves. We had also put the question, following a consideration of the raciological hypothesis of v. Eickstedt, whether the serological character of the Central and East-central tribes was not due to miscegenation with the higher racial elements of the Indian population.¹ Since then, we have learnt of an attempt at a racial classification of these tribes, by Macfarlane and Sarkar, who apply the results of their serological researches as well as the anthropometric data of various investigators to this end. In summing up their results, they suggest that "there may have been *two original racial stocks*² [among the Dravidian-speakers], one resembling the Paniyan or Māler, with little of B, and the other resembling the Oraons, with little of A and plenty of B." On the other hand: "The Mundari-speaking peoples, whose language possesses a common substratum with the Mon-Khmer dialects, resemble the Mon-Khmer speaking tribes of South-east Asia in having a significant amount of both the agglutinogens A and B."

Before we can proceed to examine the above hypothesis in detail, it is but proper to point out that racially distinguishing the Dravidian- from the Mundari-speaking tribes the authors ignore the facts which led Risley,³ Turner⁴

1. Chatterji, B. K. and Mitra, A. K.,—Blood Group distributions of the Bengalis and their comparison with other Indian Races and Castes. *Indian Culture*, VIII, pp. 197-217.

2. Macfarlane, E. W. E., and Sarkar, S. S.—Blood Groups in India. *Amer. Jour. Phys. Anthropol.* XXVIII, 1941, pp. 397-410. Italics ours.

3. Risley, H. H.: The tribes and castes of Bengal, 1891, etc.

4. Turner, Sir Wm.: Contribution to the Craniology of the People of the Empire of India, II. *Trans. Roy. Soc. Edin.* XL, p. 59 ff.

and Guha⁵ to claim their fundamental unity. They are also unaware of a recent attempt to differentiate between the two groups, though their results are in the main similar. We refer to the work of Majumdar⁶ who asked: "(1) Whether the Austric-speaking tribes in India or more particularly the Munda-speaking groups represent the same racial type? (2) Is there any racial difference between the Munda- and the Dravidian-speaking groups?" With certain reservations Macfarlane and Sarkar may be said to reply to the above questions in the affirmative; and, incidentally, their hypothesis not only corroborates that of Majumdar, but has the distinction of pushing it further.

As regards methodology, we are constrained to observe that there is some vagueness about the role of anthropometric data in their hypothesis. In explaining the gradient of the values of q which range from 0.08 (Paniyans) to 0.35 (Bhils), being equal to the variation in q for the whole world, the authors suggest that "there were two aboriginal peoples, one having the physical characters of the Paniyans or Mālēr with a low content of B and the other having the physical characters of the Oraons having a low content of A and more B who took part in the racial make-up of the aboriginal population of India." This is certainly an attempt to differentiate the tribal groups racially not only on the basis of their physical characters, but also on the basis of their blood group distributions. The authors indeed admit that "Blood-group data can not be correlated with physical characters," but are not evidently prepared to extend this absence of correlation to physical character-complexes. In practice, however, there is no distinct attempt to distinguish the three groups of tribes by means of their physical characters. There is only an undercurrent of thought that the purer a tribe, the shorter should it be in stature and the more pronounced should be its chamaerrhiny; we find the same criteria applied to the Dravidian- as well as to the Mundari-speakers. In attaching too much significance to these differences, the authors appear to forget that *some* variations are bound to occur even within members of the same race. To quote E. Fischer (Berlin) on the affinities of the Weddas, the Senoi and the Toala: "Aber auch die sehr exacte Einzeluntersuchung hat nur verschwindende Unterschiede und damit die wirkliche Einheit feststellen können. An Grösse sind Wedda und Toala gleich, Senoi etwas kleiner, an Farbe Senoi und Wedda gleich und Toala etwas heller, die Haarform, Bartform ist bei allen drei dieselbe; die Kopfform

5. Guha, B. S.: Racial Affinities of the Peoples of India; in Census of India, 1931, I. 3. Simla, 1935. pp. lxii-lxiii.

Idem.—The Aboriginal Races of India. *Science and Culture*, IV, 1935. pp. 677-683.

6. Majumdar, D. N.—The Relationship of the Austric-speaking Tribes of India, with Special Reference to the Measurements of Hos and Saoras. *Proc. Ind. Acad. Sci.* VII. 1938. pp. 1-21.

bei Wedda schmäler als den anderen beiden, der Index ist für Wedda 73, für Senoi 78.5, für Toala 80.4; die Physiognomie, Nasenform u. s. w., die Proportionen völlig gleich!"⁷

We select the more important of the anthropometric data cited by Macfarlane and Sarkar for subsequent reference in the following table:

TABLE I.

Averages of the anthropometric data on Dravidian- and Mundari-speaking tribes.

Tribes	Dravidian-speakers. Group I				Dravidian- Group II		Mundari-speakers	
	Kanikkar (Iyer)	Paniyan (Thurston)	Chenchu (Thurston)	Chenchu (Guha)	Mäler (Sarkar)	Oraon (Basu)	Munda (Basu)	Santal (Sarkar)
Number measured	240	25	40	23	188	256	250	168
Characters and Indices								
Stature (cm)	153.4	157.4	162.5	165.0	156.6	161.8	158.2	159.6
Max. Head length (mm)	182.0	184.0	182.0	185.2	184.2	186.2	187.2	187.0
... Headbreadth ...	135.0	136.0	135.0	134.8	137.2	138.2	138.1	138.9
Bizygomatic breadth ...	123.0	126.0	—	129.0	131.0	130.7	131.7	133.5
Nasal height ...	40.0	40.0	—	48.2	47.2	48.7	48.4	48.7
Nasal breadth ...	36.0	38.0	—	39.0	39.6	40.2	40.2	37.9
Total facial height ...	101.0	—	—	110.0	109.7	115.8	111.8	114.7
Length-breadth								
Index of the head ...	74.0	74.0	74.3	72.9	74.5	74.8	74.8	73.8
Nasal Index ...	89.9	95.1	81.9	81.4	84.3	82.7	88.8	73.5
Total facial Index ...	81.6	—	—	85.8	83.7	88.7	84.9	85.8

Attention must be drawn to the sizes of the Paniyan and Chenchu samples (25; 23 & 40) in the above table; the value of such small samples is not beyond question. We are reminded of a certain note on the work of Cipriani⁸, pointing out that his figures for the Kadir [19 ♂, 12 ♀], Kanikkar [20 ♂, 15 ♀] and Urali [21 ♂, 10 ♀] are "scarcely statistically significant."⁹ The same note also observed: "The table in which the author [Cipriani] compares his results with those of Holland published thirty-five years ago is illuminating, because it demonstrates the reliability of the cephalic index and the unreliability of the nasal index for comparative purposes when different workers are involved." The same objection could be made to Thurston's data on the nasal indices of the Paniyans.

7. Fischer, E.—Spezielle Anthropologie; Rassenlehre: in Kultur d. Gegenwart, III, Anthropologie, Leipzig and Berlin, 1923, p. 196.

8. Cipriani, L.—Su alcuni gruppi umani del Curg. *Archivio per l'Antropologia e la Etnologia*. LXV. 1935. pp. 87-124.

9. Science Notes: in *Current Science*, August, 1936, p. 105.

and the Chenchus, also on the strength of another table of Cipriani's, on the Todas of the Nilgiri hills, of which the following is an extract :—¹⁰

TABLE Ia.

Averages of the Anthropometric data of various investigators on the Todas.

Author's	Year.	No.	Stature (cm)	Cephalic Index.	Nasal Index.
Mantegazza	1886	19	167·8	75·2	—
Schmidt	1894	22	168·9	73·1	76·0
Thurston	1909	81	169·6	73·8	74·9
v. Eickstedt	1926-29	78	171·9	72·2	68·3
Cipriani	1935	61	168·8	73·0	66·1

It is to be noted that whereas 20 Kanikkars measured by Thurston yielded a nasal index of 84·6 in average the same number measured by Cipriani had an average of 73·7 only; Iyer's average for 240 Kanikkars being 89·9! Clearly the data of all the investigators brought together in their table by Macfarlane and Sarkar are not reliable in the same sense and to the same extent. Too much significance should not be attached, at any rate, to all measurements taken before the technique prescribed by the Monaco agreement came to be in use in India.

II

The original racial stocks.

Of the first racial stock we are told that "Blood group data and physical measurements testify to a relation between the Paniyans, Kanikkars and Chenchus of South India with the Mālér of Bihar." Among these the Paniyans are claimed to "contain a marked negrito element," and are presumed to have "maintained their racial stock almost unmixed in their isolated mountain retreat." "The Chenchus", to quote Howells, "are a group which Guha considers best portrays the aboriginal Veddoid, or non-pygmy element in India, . . . The one individual of this tribe whose photograph is published by Guha [1935] looks extraordinarily like an Australian."¹¹ As regards the Mālér, two of their skulls studied intensively by Sarkar led him to conclude that "No significant racial difference can . . . be said to have been revealed between the Mālér and the other cranial series [Wedda] in spite of the undoubted smallness in the size of the former."¹² The first original racial stock of Macfarlane and Sarkar, therefore,

10. Cipriani, L.—I Toda. *Archivio per l'Antropologia e la Etnologia*, LXVII, 1937, pp. 1-59.

11. Howells, W. W.—Anthropometry of the natives of Arnheim Land and the Australian Race Problem. *Peabody Papers*, XVI, 1. Cambridge, Mass., 1937, p. 63, citing Guha, 1935, p. xlvii ff. *Ibid.* pp. lxii-lxiii; also Pl. II, fig. 7.

12. Sarkar, S. S.—On the Osteology of the Mālér. *Trans. Bose Res. Inst.* XIV, 1938-39, pp. 31-56.

is made up of Negritos and Weddids, provided the available information is correct.

The Paniyans, conceived to be the purest of these tribes, form the cornerstone of this hypothesis. They have the shortest stature, the broadest noses (whether the measurements are correct and the data statistically significant has been questioned above), the highest percentages of A and the lowest of B.¹³ The Chenchus "stand closer [to the Paniyans] with respect to blood groups than any tribe examined," with "less of B than of A". Yet their B amounts to 18% as compared to Paniyans, B = 7.6%. Some of their B is considered due to miscegenation with forest guards. Correspondingly, their taller stature and finer nose in both the series of Thurston and Guha, from Nallamallai Hills, Kurnool and Hyderabad respectively, testify to "racial intermixture". The Kanikkars (211) who show a distribution of O = 51.18% ; A = 18.48% ; B = 29.86% and AB = 0.47% (which indicates according to Macfarlane and Sarkar, either genetic inequilibrium or technical defects in the tests), are also claimed by Karunakaran to have derived their high B through intermixture with forestguards and plainsmen, though perhaps not all of it according to Macfarlane and Sarkar ! Serologically "their position seems to be somewhat akin to the Oraons" (-received their B% from others !) who are taller than the Paniyans (+4.4 cm.) and less platyrrhin ! Is it not altogether strange that deriving, as they are supposed to do, *some* of their B% from the taller Tamils, the Kanikkars should have continued to keep 4 cm. shorter in stature than the Paniyans, whereas the Chenchus and Oraons behave in exactly the opposite manner ? Perhaps also there is no room for doubting that some of the O% of the Kanikkars could have been transmitted with B in a recessive manner from the same plainsmen and forestguards !! *En passant*, it would be interesting to find out if all the forest guards responsible for the "Rassenschande" on Chenchus, Kanikkars etc., are of the group B !!!

The Mäler are claimed to "show the northernmost thrust of the aboriginal group of people with southern affinities before they were overrun by the Mundari-speaking peoples." Our colleagues thus corroborate Howells, who on the basis of Risley's data concluded that the "Mäler appear to resemble the

13. Of the Poulayans, the other Negrito group (Guha, *loc. cit.*), 45 blood samples were tested by Macfarlane. The percentages, combined with 4 Kanikkars and 1 Ulladan were : O = 48 ; A = 30 ; B = 9 and AB = 12. Perhaps the sample was too small, but Macfarlane and Sarkar have drawn important conclusions from smaller samples. The contrast with the Paniyans is striking (O = 20% ; A = 62.4% ; B = 7.6% and AB = 10%) in respect of O% and A%. For 16 Poulayans of Maliatur, Lapique gives : Stature = 154.9 cm., Cephalic Index = 76.9 and Nasal Index = 76 ; also for 16 Poulayans of Anaimalais Hills, Stature = 155 cm., Cephalic Index = 71 and Nasal Index = 78.

jungle tribes of the south more than any other group.”¹⁴ A comparison of the tables of anthropometric data given by Howells (no. 35) and Macfarlane and Sarkar (no. 3) however does not make the above conclusion inevitable. For reasons stated above, the shorter stature of the Māler will not necessarily prove their southern origin and not much significance can be attached to Risley's nasal index (94.5). It will be clear from Table I that the Māler share the not infrequent tendency of the East-central aborigines towards broader zygomae, and if the nasal dimensions of the southern tribes, viz., the Kanikkar and the Paniyan have been correctly shown in the data of Iyer and Thurston, an appreciably higher and a trifle broader nose. (The Chenchu, who are geographically located midway between the two groups occupy an intermediate position.) According to the authors, however: “Serologically the Māler link up with the Chenchus and Kanikkars.” But the Māler blood-group formula is made up of two groups,¹⁵ one of which comprising 139 subjects ($O = 46.76\%$; $A = 15.83\%$; $B = 31.65\%$ and $AB = 5.76\%$) shows a striking similarity with the 155 Oraons ($O = 47.10\%$; $A = 12.90\%$; $B = 34.84\%$ and $AB = 5.16\%$). This is specially interesting in view of the tradition of common origin of the Oraons and the Mālers (Rājmahālis)—and their ultimate separation, which Dalton found among the former seventy years ago, and which is denied by the Mālers.¹⁶ The second group comprised 96 subjects, all from villages situated on the banks of the river Gumāni, and showed $O = 35.62\%$; $A = 39.58\%$; $B = 19.79\%$ and $AB = 5.21\%$, comparing not badly with the Chenchus. Such comparison would not be, however, justified in view of Sarkar's statement that the “data. . . is highly interesting in having the highest percentage of A (39.58%) and the lowest of B (19.79%); this may not improbably be due to high inbreeding within this locality.” The pooling of the two samples is objectionable from every point of view.

14. Howells, W. W.—*op. cit.* p. 63.

15. Sarkar, Sasanka Sekher.—Blood Grouping Investigation in India, with Special Reference to Santal Perganas, Bihar. *Trans. Bose Res. Inst.* XII, 1936-37, pp. 89-101. Of 234 Hill Māler actually investigated, $O = 42.3\%$; $A = 25.2\%$; $B = 26.9\%$ and $AB = 5.6\%$. For the Oraon sample, see *Idem*, Analysis of Indian Blood Group Data with Special Reference to the Oraons, *Trans. Bose Res. Inst.* XV, 1942-43, which appears as this is going to the press. The sample is made up of three groups of *émigrés* which vary considerably in their blood-group percentages. It is doubtful if such small groups of *émigrés* can accurately reproduce the blood-group distribution of the original population. The sample is therefore not satisfactory.

16. Dalton, E. T.—Descriptive Ethnology of Bengal, Calcutta, 1872, pp. 245-246. Cf. Sarkar, Sasanka Sekhar,—The Mālers of the Rajmahal Hills, Calcutta, 1938, pp. 1-12. This author adopts the Māler point of view.

The second original racial stock, "with little of A and plenty of B," comprises the East-central Dravidian-speakers, viz., the Oraons and the Gonds. The greatest importance is attached by Macfarlane and Sarkar to the Oraons, who are 4.4 cm. taller than the Paniyans and show less broad noses. The Bison-head Maria Gonds are said to stand close to the Oraons in their physical features, with the exception that the "average cranial length of the Maria Gonds is somewhat smaller than that in the Oraons which is possibly correlated [!!] with the longer facial length [= height] of the latter." Serologically, however, the two tribes are distinct. The Oraons are claimed to resemble the Kanikkars, having "the next highest frequency of group O." "It is extremely difficult to account for their very low frequency of gene A;" "they may have received group B from other peoples on their migrations." "On the other hand the blood-group figures of the Maria Gonds are not significantly different from those of the Mundas and Santals of Bihar."

It may not be unpardonable if we seek to supplement the above statements by information from other sources. Reference has already been made to the tradition of common origin of the Oraons and the Mālers. According to the same tradition the Oraons, after their separation from the Mālers, appeared on the north-western and western portions of the plateau of Chota Nagpur, then thinly populated by the Mundas. The latter, partial to the Jhūm system of tillage even in 1872, seem to have retired from the vicinity of the Oraons, their superiors in the knowledge of cultivation by ploughs, though a few stragglers behind were noticed by Dalton in the specially Oraon quarter of Chota Nagpur, still living in villages founded by their ancestors.¹⁷

In the opinion of Howells, who compared Risley's data on the Oraons, Mundas and Mālers, "the present physical affinities of the Oraons are with the Munda, and not with the Māle. If the Oraon once belonged to the Māle, something has modified the nose and stature of one of them."¹⁸ If we leave alone stature, which is more "*labile*" than other characters, that is not the impression gained from a comparison of Basu's and Sarkar's data on the three tribes (Table I), their most appreciable difference being in total-facial height, wherein personal equation is likely to affect the results. In his analysis of the Māler crania, Sarkar (1938-39) showed that in cranial shape the Māler ♂ cranium is closely similar to the Munda ♂ and Oraon ♂ crania, though smaller in size; on the other

17. Dalton. *op. cit.* p. 246; also Roy, S. C.—The Oraons of Chota Nagpur, Ranchi, 1915, pp. 36-38. The claim of the southern origin of the Oraon as put forth by Roy (*op. cit.* pp. 17-27) rests simply on their having a monkey totem, and is of no historical significance. The tradition of their having been in possession of Rohtasgarh cannot be taken seriously, as no historical evidence is adduced.

18. Howells, W. W., *loc. cit.*

hand the Māler ♀ cranium differed from the Munda ♀ in general shape and form, "due to the marked forward growth of the Mundā skull," notwithstanding that the two agreed in a large number of characters. Undoubtedly the materials were meagre for all the groups; but they should not be overlooked, particularly in view of the remarkable agreement of the blood-group distributions of the less inbred section of the Māler (139) and the Oraons (155). Some of the similarities as well as dissimilarities between the Māler and the Oraons may be accounted for by their absorption of foreign elements, the exact nature of which is a matter for investigation.

Meanwhile, indications are not wanting that miscegenation has been going on between these aborigines and their immediate neighbours. Dalton, after describing the mild "Tamulian" type of features of the Mālers observes: "This would answer very well for a description of the better looking Oraons, especially where there is a reason for suspecting some slight intermixture of blood, and it is said that Pahārias were in former days much given to the capture of wives from the plains. . . ." ¹⁹ Of the Oraons, Dalton gives the following account of his personal observations: "The colour of the majority is of the darkest brown, almost black, but the observer may not only pick out individuals in the crowd who are of complexion as light as the average Hindu, but may find villages in which all the Oraon inhabitants are light brown to tawny. The fact is, they have to a surprising degree the faculty of assimilating their own colour and features to those of the people amongst whom they dwell, and it may be generally remarked that when there are good looking Aryans in the same village with Oraons, the complexions of the latter become brighter, and the features more in accordance with a classical standard of beauty. Not long ago a man came to me whom I took to be a follower of the prophet from the west country, but I ascertained that he was a scion of a respectable Oraon family. I went to his village and found it to be a small place inhabited by Oraons and Pathans; the latter had been settled there for many generations, and were living on terms of perfect amity with the primitive inhabitants notwithstanding the intervention of pigs. I could not help noticing aloud the singular resemblance between the two families; the remark was received with some indignation, but more laughter, and the indignation was quite subdued when I told those concerned that women were in the habit of bringing forth children in the image of the people they *saw* daily, as well as with the lineaments of their ancestors. The old wives all acquiesced in this view." ²⁰

Indications are not wanting that different sections of the Gonds have been

19. Dalton, E. T.—*op. cit.* pp. 272-73.

20. Dalton, E. T.—*op. cit.* pp. 250-51.

exposed to miscegenation with the Hindus in different degrees.²¹ According to recent observers,—“There is not the least doubt that the Gonds of the more open and civilised country, comprised in British Districts, have a large admixture of Hindu blood. They commonly work as farm servants, women as well as men, and illicit connections with their Hindu masters have been a natural result. This interbreeding, as well as the better quality of food which those who have taken to regular cultivation obtain, have perhaps conduced to improve the Gond physical type. Gond men as tall as Hindus, and more strongly built and with comparatively well-cut features, are now frequently seen, though the broad flat nose is still characteristic of the tribe as a whole.”²²

Reference has already been made to the tradition of the closer association of the Oraons with the Mundas in the western and the north-western parts of Chota Nagpur. Recent mixture is also not ruled out. It is not surprising, therefore, that Guha who tested Basu's Munda and Oraon data²³ by means of Pearson's formula of Racial Likeness found a Co-efficient (1.79) indicating very intimate relationship between the two tribes. According to these Co-efficients, “the Oraons do not exhibit any relationship with any of the South Indian tribes. But as the values of the C. R. L's between these tribes and the Bhils of Central India are even higher it is probable that they do not represent true values of relationships between these tribes, but are rather due to individuals of mixed parentage being included in Basu's samples of the Mundas and Oraons which were obtained from the outskirts of the town of Ranchi.”

There is thus a *prima facie* case for some at least of these East-central aboriginal tribes having absorbed foreign elements. To what extent, if at all, has such miscegenation affected the blood-group distributions and the racial purity of these tribes? We do not know. Till this has been determined by a thorough investigation of the neighbouring populations who may be considered to have been in the position of the *other parties* to such miscegenation (and the same applies to the gay forest guards of the south), any attempt to trace the migrations of the Oraons, Mālers etc., from the south by means of a very limited number of physical characters (metrically considered) and blood-group distribution can only be regarded as unprofitable speculation. And without first of all securing physical and serological data on such neighbouring populations as an *indispensable control*, it would be a grave error of methodology to seek to find

21. Forsyth, J.—The Highlands of Central India, London, 1889, cited by Crooke, W., on “Gonds”. Hastings' Encyclop. VI. 1913. p. 312 ff.

22. Russel, R. V., and Hiralal, R. B.—The Tribes and Castes of the Central Provinces of India, III, London, 1916, pp. 118-19.

23. Basu, P.C.—The Racial Affinities of the Mundas, *Trans. Bose. Res. Inst.* VIII, 1932-33. The Racial Affinities of the Oraons, *Trans. Bose. Res. Inst.* IX, 1933-34. Guha, B. S.—*op. cit.* (1935) pp. xlix-l.

serological affinities between the Mundari-speaking tribes of Anterior India and the Mon-Khmer-speakers, simply under the lure of their linguistic affinity.

The Mundari-speakers.

The most ambitious part of the hypothesis of Macfarlane and Sarkar relates to the Mundari-speakers, viz., the Mundas, Santals and Korkus. The authors associate with these the Maria Gonds, who "stand near to the Oraons with respect to physical features"; yet their blood-groups "are not significantly different from those of the Mundas and Santals of Bihar." Claimed to belong here are also the Bagdis, who differ from many of the aborigines in having a lower percentage of O. About the physical characteristics of this group we are not told much, except that the "Mundas appear to be less mixed than the Bagdis and Santals. The fact that they possess the lowest mean stature and highest average nasal index (Basu, '32-'33) among the Bagdis, Maria Gonds, Bhils, and Santals points to the same thing." And this in total disregard of Guha's remarks (*ante*) about the mixed nature of Basu's Munda sample! From the serological point of view the authors conclude: "The Mundari-speaking peoples, whose language possesses a common substratum with the Mon-Khmer dialects, resemble the Mon-Khmer speaking tribes of South-east Asia in having a significant amount of both the agglutinogenes A and B. The Khasi data show a somewhat lesser content of B and more of the Tibetan and Central Chinese type of distribution."²⁴ Elsewhere, Macfarlane and Sarkar recognise "the presence of both agglutinogens A and B in almost equal doses" to be characteristic of the Mon-Khmer peoples. Notwithstanding their claim: "There is no significant difference between the blood-group distributions of the Santals, Mundas, Bagdis, Maria Gonds" etc., this so called Mon-Khmer characteristic is found among the Mundas only, the Santals as shown by the authors having "a regular preponderance of group B over A by 12-15%." (Yet their physical differences from the Mundas may be due to slight differences of technique in the Santal sample of Sarkar!) The Korku tested by Macfarlane exhibit also an appreciable preponderance of B% over A%. To explain this phenomenon, Macfarlane and Sarkar surmise that the "higher percentage of blood-group B, now found in some of the Mundari speaking tribes may well be due to intermixture with the aborigines rich in group B who were already present in India." So that the Mundas alone may be said to have preserved the original serological group character claimed to have been brought from abroad. In the following

24. In pointing out the similarities between the A and B percentages of the Mundari- and the Mon-Khmer-speakers Macfarlane and Sarkar are cautious enough to make the reservation that "nothing definite can be said for any relationships in these blood group distributions because of the paucity of data." The paucity of the data is the sole reservation they make.

table we incorporate the values of p , q and r of the Mundari and Mon-Khmer groups cited by the authors (Table II.).

TABLE II.

p, q and r of the Mundari- and the Mon-Khmer-speakers.

Tribes & Peoples	No.	p	q	r	Investigator	Tribes & Peoples	No.	p	q	r	Investigator
Korku	140	'250	'313	'447	Macfarlane	Tonkinese	997	'148	'187	'654	Hirschfeld & Hirschfeld
Santal	339	'160	'249	'575	Sarkar	Buginos (Celebes)	217	'218	'200	'589	Lehmann
Munda	120	'219	'214	'557	Macfarlane	Macassarese	195	'228	'234	'536	„
Khasi	200	'261	'168	'563	„	Ambon Ma-lays, Molucca	1471	'128	'128	'747	Bijlmer
Annamites	500	'161	'198	'648	Hirschfeld	Javanese, Padang Hospital }	1346	'173	'198	'632	Bais & Verhoef

Attention is drawn to the Ambon group with its very high value of r , and very low values of p and q , which reflect on conditions peculiar to the Moluccas and New Guinea;²⁵ the group may be therefore excluded from this comparison. The Buginos and the Macassarese, on the other hand, while showing the greatest resemblance to the Mundas, are distinguished from the Indo-Chinese, Tonkinese, and Javanese by their lower values of r and higher values of p and q . As they are included among Malayic peoples in a broad sense, the affinities of the Mundari-speakers, Buginos and Macassarese are best compared with other Malay samples. In the following table we incorporate the figures after Streng.²⁶

TABLE IIa.

Percentages of p, q and r of the Malayic peoples.

Peoples.	No.	p%	q%	r%
Formosan aboriginals-Furuhata }	6983	19.9	15.7	64.4
Formosans -Furuhata }	1286	17.4	15.9	66.7
Indo-Chinese	1692	16.8	19.4	63.8
Javanese	10762	15.5	22.1	62.4
Sumatranese Padang Hosp.-Bais & Verhoef. }	546	15.0	18.6	64.4
Philippinos	2170	14.7	19.2	66.1
Malays	9091	15.4	17.8	66.8

25. Bijlmer, H. J. T.—The relation of blood-groups to race, and some personal enquiries in the south-west Pacific. C. R. Congr. Int. Anth. et Eth. London, 1934. pp. 81-82. 26. Streng, O.—Die Bluteigenschaften (Blutgruppen) der Völker, besonders die der Germanen. Hirt-Festschrift (1935). I. pp. 407-435.

The peoples included in the above table, though of the same group as the Buginos and the Macassarese, are all characterised by higher percentages of r and low values of $p+q$ together. Only the Javanese show comparatively higher values of $p+q$, and the tendency of $q\%$ to preponderate appreciably over $p\%$. It is possible that the Buginos and the Macassarese also diverge from the others owing to local circumstances which can not be discussed here. On comparison with the Mundari-speakers, it is found that the latter have lower values of r than the other Malayic peoples excepting the Buginos and Macassarese, and higher values of $p+q$. If we are to go by these values alone, the Korku clearly do not belong here. We could not say the same of the Mundas and the Santals, unless we were prepared to exclude the Buginos and the Macassarese; indeed they could be presumed to have diverged in the same way, or in a number of ways but with the same result. Nor should we hesitate to accept such a conclusion, provided sufficient evidence were forthcoming that the Mundas and Santals are Malayic peoples; or that they stand to the latter as more or less similar fragments of the same old *ethnos* or at least they are racial conglomerates composed of the same elements as the Malayic peoples, independent in origin but with convergent tendencies in regard to blood-group distribution. This question seems to have already occurred to P. W. Schmidt in connexion with the racial affinities of the "malay-polynesian" peoples, whom he proposed to re-name "Austronesian" on linguistic grounds. He writes: Entspricht nun auch dieser grossen linguistischen Einheit, bilden diese hinter- und vorderindischen Völker mit den austronesischen auch eine Rasse? Wenn ich statt des Namens „austronesisch“ noch den alten Namen „malayo-polynesisch“ gebrauchte, würde ich dadurch an einer bejahenden Antwort sehr gehindert sein. Denn es ist ja bekannt, dass gerade die Malaien, dann auch die Javanesen und die gesamten philippinischen Stämme, entschieden brachykephal sind, straffes Haar und vielfach auch Neigung zu obliquer Augenstellung und Kurz- und stumpfnasigkeit aufweisen.

. . . Aber die neueren Messungen lassen doch immer mehr hervortreten, dass auch in Indonesien neben dem brachykephalen auch der dolichocephale Typus vertreten ist, so besonders bei den Battak und Dayak, und mit diesem ist auch welliges Haar, breite Nase und horizontale Augenstellung in grösserer Konstanz verbunden als mit dem brachykephalen Typus. Je weiter nach Osten, desto mehr überwiegt die Dolichocephalie mit den anderen hier bezeichneten Merkmalen." P. W. Schmidt was of opinion that if the answer to this question could be in the affirmative, "dann muss sowohl Name wie Begriff der „malaiischen Rasse“ gründlich reformiert oder eigentlich vollständig mit derselben aufgeräumt werden. An Stelle derselben hätte dann Name und Begriff jener Rasse zutreten deren Bestehen in Vorder- und Hinterindien jetzt schon nachgewiesen ist, und mehr noch als man das jetzt schon tut, müsste dann betont werden, dass die Abweichungen der Malaien, Javanesen, Philippiner u.s.w. von dieser Rasse erst sekundärer Natur und aus der Beeinflussung durch mongolische Völker ent-

tanden seien,"²⁷ A Weddid element has today been recognised in Insular India and its mixture with the Malayic population does not seem improbable.²⁸ Is it possible that the similarities in blood-group percentages between the Malayic peoples and the Mundari-speakers pointed out by Macfarlane and Sarkar are due to this element and that the infusion of the Mongolians has had no effect on the blood-group distributions? We have no reason for supposing so, but we shall never know till we have data from the tribal groups of Sumatra!

The discussion of the serological affinities of the Mundari-speakers and the Malayic peoples (Austronesian) forced on us by the inclusion of the latter in their Table 4 has therefore led us into a blind alley. There is no clear ethnic unity traceable between the Korku, Munda and Santal and the Sumatranese, Javanese, Philipinos etc. Unless this ethnic unity is proved to subsist between the Korkus, Mundas and Santals and the Buginos and Macassarese etc., the similarities in blood-group percentages can not have any significance and will be found traceable to different causes having the same effect. One might as well point to similarities in blood-group distribution between some of the Finno-Ugric peoples and the Khasis, Mundas and Korkus in support of Wm. v. Hevesy's theory of Finno-Ugric affinities of the Mundari speakers!²⁹

The Austro-Asiatics.

As a matter of fact, "Mon-Khmer" as a linguistic group has a far more limited significance than one would presume from the groups included in Macfarlane and Sarkar's Table 4, which corresponds to our Table II. It comprises "the two ancient literary languages, Mon and Khmer, Bahnar, Stieng, dialects of the tribes called Moï: Samreh, Kha-so, Kha Tampuen, Schong, Huei, Suc, Sue, Hin, Nahang, Mi, Khmus, Lemet, all in Indo-China; and in the peninsula of Malaya, Bersisi and Jakun." There are besides a mixed group of languages, Čam, Radé, Jaraï, Sedang, which are Mon-Khmer judged by their construction and vocabulary but have borrowed a large number of words. With the closely related Munda or Kol languages, the Khasi, Nikobarese, Wa, Palong and Riang and also the Semang and the Senoi the Mon-Khmer and the mixed languages have been grouped by Schmidt in a common family which he termed Austro-Asiatic.³⁰ There are some languages on the Himalayan border, which though

27. Schmidt, P. W.—Die Mon-Khmer Völker, Braunschweig, 1906, pp. 60-62.

28. Kleiweg De Zwaan, J. P.—The Vedda element in the population of the East Ind. Archipelago. C. R. Congr. Int. Anth. et Eth. London, 1934, pp. 201-2.

29. Hevesy, Wm. v. Finnisch-Ugrisches aus Indien. Es gibt keine austrische Sprachfamilie—das vorarische Indien teilweise finnisch-ugrisch, Wien, 1932: in Régamey, C.—Bibl. Anal. des Travaux Relatifs aux Eléments Anaryens dans la Civilisation et les Langues de l' Inde—Bull. E. F. E. O. XXXIV, 1935, no. 195.

30. Schmidt, P. W.—*Op. cit.*

Bagchi, Prabodh Chandra: in Introduction to Pre-Aryan and Pre-Dravi-

of Tibeto-Burman origin show the last traces of the Mundari, viz., the Kanawari on the southern frontier of Kashmir. The Kanāṣi, Mancatī, Ranglōī, Bunān, Rañkas, Dārmiyā, Caudānsi, Byānsi and Dhimal of Nepal should also be mentioned in this connection. The domain of the Munda, therefore, is presumed to have been much wider in ancient times and "has been [since] reduced and cut into pieces by Aryan and Dravidian on the west and Tibeto-Burman on the east."

What makes the Austro-Asiatic group of languages a matter of absorbing interest to students of Indian Anthropology, particularly of the aboriginal problem, is that P. W. Schmidt believed to have been able to trace a number of physical characteristics commonly shared by the Austro-Asiatic speakers. Accordingly, he hoped that with the increase of our knowledge these characteristics would turn out to comprise an anthropological unity. He writes: "Wir haben also genügende Aussicht, dass zu den grossen sprachlichen Einheit, deren Bestehen in Hinter- und Vorderindien nun als gesichert betrachtet werden muss, in absehbarer Zeit auch eine anthropologische Einheit sich zugesellen wird, deren Geltungsbereich im grossen und ganzen mit demjenigen der ersteren zusammenfallen, an vielen Stellen aber wohl noch über denselben hinausgreifen wird."³¹ As the Annamites, included by Macfarlane and Sarkar in their table (no. 4) of blood-group distribution of the Mon-Khmer-speakers (Table II),³² are considered by Schmidt to share the same characteristics, the question of an ethnic unity subsisting between the Austro-Asiatic-speakers, which would explain the resemblances in blood-group percentages, has to be considered.

Schmidt writes: "Die gleichen physischen Merkmale aber, die ich bei den Senoi und Sakei und den Mon-Khmer-Völkern nachgewiesen, durch welche diese sich scharf so wohl von ihren malaiischen als ihren mongolischen Nachbarn absondern, kann ich nun aber auch teilweise noch vermehrt und genauer bestimmt bei allen den Völkern dartun, deren sprachliche Zusammengehörigkeit ich nachgewiesen habe. Es sind: 1. dolichokephale bis höchstens mesokephale Schädelbildung, 2. horizontal-, nicht schief liegende Augen; runde, weite nicht enggeschlitzte Augenöffnungen, 3. breite Nasenflügel, 4. dunklere Hautfarbe, 5. mehr oder weniger welliges Haar, 6. kleinere bis mittlere Statur. Die Gesamtheit dieser Merkmale ist jedenfalls in negativer Hinsicht zwingend, diese Völker sowohl von der mongolischen als den arischen Rassen zu trennen, ob auch von der Dravida-Rasse kommt hier nicht in betracht."

dian in India (Collected papers by Lévi, S., Przyluski, J. and Bloch, J.) Calcutta, 1929, pp. i-xviii.

31. Schmidt, P. W.—*Op. cit.* pp. 26-34; Grierson, G. A.—Review in *J. R. A. S.* 1907, pp. 187-192.

32. The series comprised 500 soldiers of the Entente army in Macedonia, mostly Tonkinese.

Schmidt tried to substantiate the above by a list of anthropological measurements, which included length-breadth index (of the head or skull), nasal index, orbital index (skull) and stature (living). The populations comprised Senoi (Martin), Rade, Penong, Kui, Roong, Nong and Khmer (Maurel); Khmer (13 skulls, Maurel and Zaborowski); Moïs (7 skulls, Néis Zaborowski), Bahnar (4 skulls, Zaborowski) and Nikobarese (4 skulls, Flower & Virchow); also 17 living samples of various sizes from the Chota Nagpur plateau in Anterior India, which included the Asur, Bhuiya, Binjhia, Birhor, Bhumij, Chero, Chik, Dom, Kharia, Kharwār, Korwā, Kurmi, Lohar, Munda, Oraon, Santals of W. Bengal and Tanti.

To this was added a short description (Thorel) of the "dolichokephale Schädelbildung, dunkle Farbe, horizontale Augenlage, welliges Haar der Annamiten, Cambodjaner, Stieng, Bahnar, Sedang;" also short descriptions of the Palong-, Wa-, Mon (Pegu) and Khasi tribes from English sources. The brachycephaly of some of the Khmer skulls was regarded as the only significant instance against the identity of connection of the Austro-Asiatic-speakers.

- Schmidt's hypothesis has been since contested by v. Heine-Geldern. The following is an extract from Régamey's abstract of his work: "Le P. W. Schmidt se fondait sur des données insuffisantes et trop inexactes pour pouvoir prouver la parenté anthropologique des peuples austroasiatiques. D'autre part, comme il n'a pas démontré que ces peuples diffèrent, au point de vue anthropologique, des Tibeto-birmans, des Siamois, etc., il ne peut pas établir l'existence d'une race austroasiatique distincte. M. H. G. signale que les Mon, les Khasi et les Palaung appartiennent plutôt à la race mongole et qu'il est impossible de différencier d'une façon nette les autres peuples austrasiatiques de leurs voisins. Par conséquent, on doit abandonner l'idée qu'une race spécial correspond à la famille linguistique austroasiatique. On pourrait plutôt parler d'un groupe anthropologique 'indo-australien', comprenant les Senoi, les Kubu, les Toala, les Wedda et plusieurs tribus montagnardes de l'Inde."³³ It is also possible to recognise a Negrito element, as some do, in the Semang etc.³⁴

There is a divergence of opinion as to which of these races, Mongolian or Indo-australian, is responsible for the introduction of Austro-Asiatic into India. Thus, Chanda following Schmidt's description of the Austro-Asiatic physical characteristics (Grierson, 1907) connected them with the Pre-Dravidian Niśādas. These he assumed to have been originally Austro-Asiatic-speakers.³⁵ (The position is actually covered by Schmidt's list of populations having Austro-Asiatic

33. Heine-Geldern, R. v.—Gibt es eine austroasiatische Rasse? *Arch. f. Anth.* xviii (xli), 1920, pp. 79-99. Régamey, No. 53. Cf. Fischer, E. (1923) *loc. cit.*

34. Chatterji, Suniti Kumar.—Indo-Aryan and Hindi: Ahmedabad, 1942, pp. 32-34.

35. Chanda, Ramaprasad.—Indo-Aryan Races, Rajshahi, 1916.

physical characters.) M. Sylvain Lévi arrived at the same conclusion from his study of a number of ancient Indian ethnics, particularly a description of the Pulindas in the *Bṛhatkathā-slokaśaṃgraha*, VIII. 31.³⁶ On the other hand v. Eickstedt³⁷ and v. Heine-Geldern³⁸ appear to associate the Mongolians with the Austro-Asiatic speech. According to the latter, "Cette race mongoloïde a dû former la plus ancienne couche comme en Asie méridionale; les invasions successives ont déchiré l'unité primitive de cette ancienne couche ethnique et détruit sa pureté anthropologique. Le type le plus pur serait représenté par les Khasi, les Riang, les Palaung, les Mon et, peut-être, les Khmer et les Annamites. Il est difficile d'établir jusqu'à quel point les Muṇḍa ont conservé la pureté de race, puisqu'ils ont dû subir de nombreuses influences." (1920).

The autochthonous black of the Deccan are, according to M. Przyluski, the distant ancestors of the present Dravidians, and instead of 'Pre-Dravidian' should be called 'Proto-Dravidian', a term that does not prejudge their racial affinities. "To the aborigines with dark skin, the primitive ancestors of the Dravidians, were superposed the conquering Kols or Mundas, having a brighter colour. The Mundas are not the Pre-Dravidians, they subdued the Proto-Dravidians." The reference to the Pulindas in the *Bṛhatkathā-slokaśaṃgraha* is interpreted by him as showing the relations between the Proto-Dravidians and the Kols and Mundas. "It is not necessary to consider the Kols and Proto-Dravidians as rival races always occupying distinct territories. In some cases, perhaps in the majority of cases, these two ethnic elements lived together in the same territory; an aristocracy with a bright complexion [probably yellowish] and a body of plebeians with a dark complexion."³⁹

It is certainly true that the anthropological literature contains not infrequent references to Mongolian features noticed among the tribes of the Chota Nagpur region. Thus Dalton speaks of oblique eyes and Mongolian physio-

36. Lévi, S.—Préaryen et prédravidien dans l'Inde. *Jour. Asiat.* cciii. 1923, pp. 1-57; Pre-Aryan and Pre-Dravidian in India (Engl.), Calcutta, 1929, pp. 63-126.

37. Eickstedt, E. v.—Der Zentral-Dekkan und die Rassengliederung Indiens, *Anth. Anz.* VIII, cited in Heine-Geldern (1928).

38. Heine-Geldern, R. v.—Ein Beitrag zur Chronologie des Neolithikums in Südostasien. *Festschrift, Publ. d'hommage offerte au P. W. Schmidt*, Wien, 1928, pp. 809-843 (Régamey, no. 130); Orissa und die Mundavölker im "Periplus des Erythräischen Meeres." *Beitr. zur historischen Geographie, Kultur-geographie, Ethnographie und Kartographie, vornehmlich des Orients.* Leipzig und Wien, 1929, pp. 157-171. Régamey, no. 131.

39. Przyluski, J.—Pre-Dravidian or Proto-Dravidian? *Ind. Hist. Quart.* VI, 1930, pp. 145-49.

gnomy among the Juangs,⁴⁰ Hos or Larka Kols,⁴¹ Cheros⁴² and Parheyas⁴³ of Palamau. He describes the features of the Mundas as follows: "When the face of the Moondah varies from the Aryan or Caucasian type, it appears to me to merge into the Mongolian than the Negro. High cheekbones, small openings for the eyes, having in some instances a tendency to the peculiar oblique set of the Mongolian and flattish faces without much beard or whisker. They are of average stature, and in colour vary from brown to tawny [? tawny] yellow."⁴⁴ According to v. Heine-Geldern, "E. Eickstedt distingue chez les Munḍa les couches anthropologiques suivantes: 1° la plus ancienne, composée des éléments mélanides et weddoïdes, 2° la couche dravidienne (indides méditerranéens), et 3° la couche mongolide. Seule cette dernière couche représente l'élément austroasiatique."⁴⁵ Basu, who made a study of 250 Mundas writes thus of their eyes: "The direction of the eye-slits . . . is either horizontal or only slightly oblique. And the obliquity is due to the fact that the outer canthi are usually on a higher level than the inner ones. The true epicanthic fold is present in two individuals only, and in seven cases there is a slight hint of it." The same investigator describes 81 Bhuiyas of Mayurbhanj as follows: "The eyeslits are either straight or oblique [slightly oblique = 40] and the epicanthic folds are present in a few individuals [5 cases, with hint of ep. fold in 1 case]. These with the prominent zygomatic bones, slight yellowish tinge in the complexion suggest a submerged Mongoloid strain as suggested by Col. Dalton but denied by others."⁴⁶ Among 127 Kols of Jubbulpur, one of us (Chatterji) found 22.8% eyes with outer canthi raised, 51.18% slightly raised and 25.98% straight eyes; while epicanthic fold was present on two individuals, and four persons showed only traces thereof. Among 100 Santals studied at Dumka, Santal Parganas, the same investigator found 6% eyes with outer canthi raised, 51% slightly raised and 43% straight eyes; while epicanthic fold was slightly indicated on one individual only.

40. Dalton, E. T. *op. cit.* p. 157.

41. *Ibid.*, p. 190.

42. *Ibid.*, p. 126.

43. *Ibid.*, p. 131.

44. Dalton, E. T.—Trans. Eth. Soc., London. *New Ser.* Vol. 6, p. 15, cf. 17, cited by Schmidt, P. W., *op. cit.*

45. Eickstedt also found a Mongoloid type among the Veddas of Ceylon, which is explained by Malay mixture. As Osman Hill points out, "Malays are numerous in parts of Ceylon but there is no proof of their mixing with Veddas at any time." Osman Hill, W. C.—The Physical Anth. of the Existing Veddahs of Ceylon. *Ceylon J. Sci.* (G) III, 2, 1941, pp. 27-144. *Specially* p. 38 and reference.

46. Basu, (1932-33), *Idem.*—The Anthropometry of the Bhuiyas of Mayaur-

On going through the available material—v. Eickstedt's data on the Mundas are not available in the present circumstances—we do not feel satisfied that in the recorded cases the oblique eyeslits and the epicanthic folds have been so well observed, both in morphological details and from the genetical standpoint, that we could unhesitatingly attribute these features found in the Anterior Indian aborigines to the yellow race. As regards the oblique eyes, consideration of the photographic reproductions of the aborigines that we have examined makes us recall the remarks of R. Martin *a propos* of the Senois etc.: "Ueberblickt man die auf den Tafeln abgebildeten Individuen, so überzeugt man sich dass in der Mehrzahl der Fälle die Lidspalte ein wenig schräg gerichtet ist, d. h., dass der äussere Augenwinkel etwas höher steht als der innere. Diese Bildung ist nicht wie beim typischen Mongolenaugen auf eine Täuschung zurückzuführen, die dadurch erzeugt wird, dass das obere Augenlid den innersten Abschnitt des unteren überwächst und verdeckt, denn bei den Senoi liegt mit wenigen Ausnahmen die Caruncula lacrymalis frei zutage, sondern die Schrägrichtung ist vielmehr durch die Schweifung des unteren Augenlides bedingt, das in seinem lateralen Abschnitt stark nach oben aufsteigt, während die mediale Partie flacher verläuft. Dadurch kommt der äussere Augenwinkel tatsächlich etwas höher zu liegen als der innere. Das obere Augenlid dagegen ist meist gleichmässig gerundet oder geschweift. Ganz gerade Lidspalten habe ich nur bei 20 Individuen beobachtet.

Die Lidspalte selbst ist meist lang, eng oder mässig weit, doch kommen auch weiter geöffnete vor, in welchem Falle das Auge dann gross und offen blickt. . . . Immerhin notierte ich bei 68 Individuen "Lidspalte schräg und eng" was wir also als die typische Bildung betrachten müssen. Das eigentliche Mongolenaugen, wie es Bälz beschrieben hat fehlt bei den Inlandstämmen; sie besitzen weder jene Fettansammlung in oberem Augenlid, wodurch die Einsenkung unter den oberen Orbitalrand, d. h. zwischen Lid und Stirnrand, wegfällt, noch jene Umschlagsfalte des oberen Lides, die an der Seite der Nase mit der Gesichtshaut verwächst."⁴⁷ A similar observation is recorded by Cipriani on the short faced type of Ieravàs of Kurg: "uno secondo tipo, meno dolicocephalo, ha faccia breve, tendenza al prognatismo totale, naso molto largo, angolo interno dell'occhio situato inferiormente all'angolo esterno, capello più fortemente ondulato del precedente."⁴⁸

The recorded cases of epicanthic fold, in so far as they have been correctly observed, lead to a difficult problem. The Sarasins found no instances of epican-

bhanj. Jour. Pr. As. Soc. Beng. New Ser. XXV, 1929, pp. 157-163. Of 250 Oraons studied by Basu (1933-34), 34.8% showed slightly oblique eyes; there was one case of true epicanthic fold.

47. Martin, R.—Inlandstämme der malajischen Halbinsel, Jena, 1905, pp. 401-2.

48. Cipriani, L.—*op. cit.* (1935).

thus in adult Weddas and did not observe any on children; but they had examined too few children of very early age.⁴⁹ Among the inland tribes of Malay Peninsula, however, Martin found the beginnings and traces of an epicanthus on 23 individuals of all ages and sexes, often indeed on one side. He says: "In allen diesen Fällen nämlich bildet das obere Augenlid meist vom äusseren Augenwinkel an eine kleine Falte, die den Lidrand nur selten zu erreichen und verdecken vermag, die aber gegen den inneren Augenwinkel zu steil absteigt, so dass es nicht zu der für uns Europäer charakteristischen Auswölbung oder freiliegenden Bucht am inneren Augenwinkel kommt." In the case of one Mantra, the inner fold on the right eye could be followed down over the lower eyelid, but Martin regarded him as mixed. He concluded: "*Eine Neigung zur Epicanthusbildung lässt sich also weder für die Senoi noch für die Semang . . . leugnen, wenn sie auch nicht als ein regelmässiges Vorkommen aufzufassen ist.* Die Bucht am inneren Augenwinkel pflegt daher auch meist kleiner zu sein als beim Europäer; oberes und unteres Augenlid stossen gewöhnlich in einem spitzen Winkel zusammen."⁵⁰

Even if the few instances of true epicanthus recorded among the Anterior Indian aborigines have been correctly observed, that would not without further evidence prove their Mongolian origin, nor testify to the existence of a submerged Mongolian strain in the primitive population of Anterior India. The genuine Mongolian fold, more or less definitely developed among the truly Mongolian peoples (South Chinese 100%; Japanese ♂ 76%, ♀ 67%), has been found to be dominant over the foldless European type by a number of investigators. As E. Fischer showed in his investigation of the Rehobother Bastards, the Hottentots possess anatomically the same type of fold as the Mongolians; but it behaves recessively in crossings with Europeans and is genetically distinct. Similarly the fold found among the Eskimos is recessive to the foldless European type and is of genetically independent origin. Indeed it speaks against the relationship of the Eskimos with the Mongolians. The Chile Indians have been found to possess a distinct type of fold. Small folds are formed on both the outer and inner angles of Negro eyes, all of which show "*die Neigung des Augenlides selbständig bei verschiedenen Rassen zu mutieren!*"⁵¹ The genetical nature of the eyefold of the Anterior Indian aborigines must be first of all

49. Sarasin, P. and F.—Die Weddas von Ceylon und die sie umgebenden Völkerschaften, Wiesbaden 1893, p. 137.

50. Martin, R.—*loc. cit.* Cf. Robinson, H. C. and Kloss, C. B.—Additional Notes on the Semang Paya of Ijok, Selama, Perak. *Jour. Fed. Mal. St. Museums*, V, 1915, pp. 187-191; Kloss, C. B.—Measurements of some Sakai of Sungkai and Slim, South Perak, with notes on the same. *Jour. Fed. Mal. St. Museums*, VI, 1915, pp. 71-84.

51. Fischer, E.—in *Menschliche Erblehre*, München, 1936, pp. 199-202.

proved by investigation to be identical with that of the Mongolian eyefold, and the presence of other Mongolian characteristics in the same populations demonstrated, before it could be recognised as truly of Mongolian origin.

The indications of skin colour are equally, if not more, complicated. We know of a hereditary yellow component in the skin of the Negro, presumably recessive by nature, which appears in the back-crossings of mulattos with Europeans, above all in the thumbnails and the naso-labial fold. It is wanting in the Australians.⁵² The tawny yellow skin-colour noticed by Dalton among the Mundas, and the yellowish tinge observed by Basu among the Bhuiyas, if proved to be yellow at all, may possibly indicate the presence of some such recessive component among the Anterior Indian aborigines. With greater likelihood however it should be recognised as one of the various nuances of skin colour found in mixed populations originating from dark \times light crossings. In any case, should the nuance turn out definitely to be yellow, it is to be taken to signify a divergence from the Australians.

A flatfaced type was noticed by one of us (Chatterji) among the Kols of Jubbulpur. Nevertheless it was not noticeably Mongoloid. In any case, the population in question is so mixed that without further investigation we are not satisfied that it could not originate from intensive crossings between the very different racial elements which build up the Kol population in this locality.⁵³

In short, if the original Austro-Asiatic-speakers had been of Mongolian origin, there is no unmistakable evidence of their existence among the Anterior Indian tribes. We may hope to know more about the Mongolian strain said to be submerged in these populations when v. Eickstedt's data on the Mundas is published. Meanwhile, the so-called oblique eyeslits, epicanthic folds etc., found among them can not be admitted as evidence of such a strain unless more light is thrown on their genetical character by further research.

Further, if one takes a little trouble to find out, the Hinter Indian landmass, Indonesia and the islands of the south-east have their own racial history with problems of their own. We have Cymotrichous or smooth-haired groups, woolly-

52. Fischer, E.—*op. cit.* (1936), pp. 116-117.

53. Cf. Majumdar, D. N.—*op. cit.* "Thus it is probable that the Mongolian element had little to do with the racial make-up of the Hos, although here and there certain Mongoloid traits have been discovered by Col. Dalton. . . . The general physical appearance of the tribes of Chota-Nagpur do not suggest any Mongolian infusion either." As quite apart from 'Stray cases' of recent origin, Majumdar is thinking in terms of "a general miscegenation with Mongoloid stock," his statement does not exclude the possibility of the existence and ultimate submergence of a brighter-complexioned (yellowish) aristocracy with the dark-skinned plebeians (Przyluski). We cannot accept this position without further evidence.

haired groups,—tribes living in conditions of primitive economy,—populations of Mongoloid origin which may have absorbed the former in different degrees. (Hindus and Arabs there had been in the past). Small groups are also not wanting who betray the characteristics of the above elements in mixed form. On the riverbanks of the Hinter Indian landmass and on the islands which are close enough to one another for purposes of communication, there have been civilizations and states—here with a prevailing inland outlook, there maritime—never inactive, scarcely having time to sink back into inanity. When the Hindu blood thins out, there are the Mongolians from the north and north-west and pouring down the waterways; the populations mingle—they diverge from the Hindu's placid contemplation of the eternal verities and exult in a *joie de vivre*, a spiritual vigour, which is reflected in their art; and withal a busy life on the seas. This zone of intensive contact of races, populations and cultures does not know complete Nirvāṇa even today. Slowly, inexorably it is being flooded by the peaceable intrusion of the Chinese. Not always in the past, however, have the Mongolians intruded in this area in so peaceable a manner as the Chinese Cooly and trader of today. One recalls the Tai or Thai immigrations into Burma, into the present Shan states, Northern Siam and Tongking where they founded several important kingdoms.

What then is the racial and ethnological position of the Annamites of today? Can they be presumed to have remained unaffected by the Tai immigrations? According to Major E. Seidenfaden who has firsthand knowledge of conditions in the Extreme Orient: "The Annamites were formerly placed in the Mon-Khmer group, as their language contains a certain number of words belonging to that language group. Recent researches seem, however, to show that the Annamites belong to the Tai group, and that mixture with the Muong, a Mon-Khmer people living in lower Tonking, as well as with the Chams and Cambodians and, last but not least, Chinese during 600 years, has produced the present Annamite type and language. . . ."⁵⁴

The resemblances between the blood-group distributions of the Annamites and the Mundari-speakers (almost equal doses of A and B) therefore have as much significance as similar resemblances between the Annamites and the Negro peoples of Africa, e.g., the Senegalese.

The aboriginal problem in Indian Anthropology.

There is one aspect of the Indian aboriginal problem which in our opinion has not been sufficiently considered in the attempts at systematic classification

54. Seidenfaden, E.—*Ethnology: in Siam, Nature and History*, Bangkok, 1930, ch. VI; *Anthropological and ethnological research work in Siam*. C. R. Congr. Int. Anth. et Eth. London, 1934, pp. 135-36.

of the aboriginal tribes. We refer to their interrelationships in respect of individual characters of their physiognomy, skull-form etc. The one significant exception to this is comprised by Guha's anthropometric survey of 1931, which included the Chenchus, Bhils, Kadars and Nattumalyans. A large number of characters of these groups (and many others) were subjected to statistical reduction by Guha, Morant and Pearson's formulae of C. R. L. being applied. The α values, which express the resemblances and divergences of the means of the individual characters of the groups under comparison (the C. R. L. is made up of many such) have been published by Guha (1935) and justify the assumption that this method of approach promises to be a fruitful one.

In view of the above consideration the present writers made a metric study of a number of cranial characters of several well known aboriginal tribes. The crania were all of adult individuals and included 6 Kols (Keonjhar etc.), 7 Mundas (Ranchi and Chota Nagpur), 4 Bhuiyas (Keonjhar and Mayurbhanj), 3 Oraons (Ranchi and Chota Nagpur) from the collection of the Anthropological Laboratory, of the Zoological survey of India; also 6 Pollachis, 3 Paniyans, 4 Poulayans and 3 Kadars from South India, now in the Musée L'Homme, Paris. The skulls from the Anthropological Laboratory, Z. S. I. had already been studied by Turner⁵⁵ and partly by Basu.⁵⁶ From these we have only retained Turner's data for 'cranial capacity'. We have also utilized Koller's data on three Santal crania (adults only) collected by Baron v. Brenner about the beginning of the present century and now in the Nat. Hist. Museum, Wien, supplementing the same by our own data on a Santal skull;⁵⁷ Müller's data on four Rajput skulls from Narsinghpur and Jāblpur (Central India), collected by the brothers Schlagintweit (1854-58), now in the Senckenberg Museum, Frankfurt-on-Main;⁵⁸ Martin and Virchow's data on five Senoi skulls (Malay Peninsula),⁵⁹ Müller's data on six skulls from Normanby & Fergusson (d'Entrecasteaux Archipel.) now in Mannheim, and the Wedda data of the Sarasins.⁶⁰

As the relationship of the Anterior Indian aborigines among themselves happen to be part of a bigger problem defined by Müller, viz., "Gehören die dolichocephalen Kleinschädel Indiens, Ceylons und Indo-Melanesiens einer einheitlichen Weddiden Rasse an?"—we used for comparison the same basis

55. Turner, Sir. Wm.—*op. cit.*

56. Basu, P. C.—*op. cit.* (1932-33 & 1933-34).

57. Koller, R.—Santalschädel, *Anthrop. Anz.* 10, 1933, pp. 235-238. The other Santal skull was from the museum of the Carmichael Medical College, Calcutta.

58. Müller, H. W.—Die Kleinschädelformen Südasians, *Zeitschr. f. Rassenk.* II. 1935, pp. 53-90; 263-296.

59. Martin, R.—*op. cit.*

60. Müller, H. W.—*op. cit.*

groups, so that the results could be directly comparable. These are Münter's data on African Negro skulls⁶¹ and Prof. Fritz Sarasin's recently completed data on ten Wedda skulls;⁶² the characters chosen and the number of characters were within the limits of our material necessarily the same. The comparison was instituted by Mollison's method of "relativen Abweichung"; the arithmetic means of the individual characters of the above groups comprised the basis or zero line; the plus or minus deviations of the means of the individual characters of the groups under comparison from the basis were expressed in terms of the maximum or minimum variations of the identical characters of the basis groups considered as 100. The figures of relative "Abweichung" or deviations are incorporated in Tables III and IV, which also show the figures of absolute deviations. The former are best studied by constructing "Abweichungs-diagramms" on millimeter paper.

The limitations of our data are apparent and need not be discussed in detail. It is however necessary to point out that craniological characters alone can not form the basis of raciological classification—the limb-proportions, somatological and integumental characters etc., have also to be considered for that purpose. Nevertheless, while we claim no finality for many of our results, the latter may be considered to yield us some "Anhaltspunkte" which may be helpful in our approach to the aboriginal problem.

It may be remarked here that samples of small size have been previously considered with very good results, e. g., the work of Sewell and Guha⁶³ on the human remains of Mohenjodaro, and of Friederichs and Müller⁶⁴ which is based upon the former. To be mentioned in this connexion is also Müller's work on the "Kleinschädel-formen Südasians", of which our work may be regarded as a supplement. In view of the small sizes of our samples we have not attached too much significance to the degree of divergence from the basis, except when several groups have shown the same tendency to exceed the range of variation of the basis group in the same manner. In interpreting the figures of "relativen Abweichung" we have mainly considered whether the groups under comparison deviated from the basis group in the same sense or not.

61. Münter, H.—Stellung d. Kopten zu den Altägyptern, *Zeitschr. Anat.*, 74, 1924, cited in Müller, H. W.—*loc. cit.*

62. Müller, H. W.—*op. cit.* The averages of the other groups were not always made up of the full number of skulls for each character.

63. Sewell, R. B. S. and Guha.—"Human Remains" in Marshall, Sir J. Mohenjodaro and the Indus Civilization, London, 1931.

64. Friederichs, H. F., and Müller, H. W.—Die Rassen-elemente im Indus-Tal während des 4. und 3. vorchristlichen Jahrtausends und ihre Verbreitung, *Anthropos*, XXVIII, 1933, pp. 383-406.

Relative deviations of the Wedda etc. from the Negro basis. (Table III)

We found it necessary to consider the deviations of the Wedda (22) and the Anterior Indian aborigines from the Negro basis in order to find out whether the latter deviated from an unrelated group, broadly speaking in the same sense as the Weddas.

A consideration of the deviations of the Wedda, Fergusson and Kol skulls shows the striking similarities of the three groups in respect of the majority of characters. All of them exceed the range of variation of the basis group in Trs. Par. occ. Ind. and Int. Orb. Ind. Among the divergences we note: 1) in respect of Sag. Par. Ind., the Kol with + 13 contrasting with Wedda and Fergusson, -16, though none deviate far from the basis; 2) Orb. Ind., the Kol with -21 contrasted with Wedda, + 20, while the Fergusson are close to the basis; 3) Trs. Cr. fac. Ind., the Fergusson with -23, diverging from the other two groups; 4) Long. Cr. fac. Ind., Wedda and Kol diverging in the same sense from the Fergusson; 5) Jugo-fr. Ind., the Kol diverging from the Fergusson, while Wedda are close to the basis. We also note that in Upp. fac. Ind., the Wedda and the Fergusson approximate to the basis, while the Kol show a well marked deviation in the minus direction.

It will be seen on Table III that Sag. Par. Ind., the Munda, Santal, Bhuiya, Oraon, Paniyan and Pollachi deviate in the same sense as the Kol, while the Kadar, Poulayan and Senoi show the same tendency as the Wedda and the Fergusson skulls. In respect of Orb. Ind., the Paniyan and Senoi are hypsi-conch, while the Santal and Kadar show relatively high orbits and the rest show the same tendency as the Kol towards a more marked mesoconch Index. For Trs. Cr. fac. Ind., the Bhuiya, Pollachi, Poulayan and Senoi agree with the Fergusson skulls, while the rest agree with Wedda and Kol. In Long. Cr. fac. Ind., only the Bhuiya and Poulayan agree with the Fergusson skulls. In Jugo-fr. Ind., Kol, Munda, Oraon and Paniyan all show lower values than the basis group, the rest agreeing with Wedda (among whom this tendency is only slightly indicated) and Fergusson. In common with the Wedda, the Paniyan, Santal, Senoi and Fergusson have Mesên or medium high faces, while all the other tribes agree with Kols in having Euryên or low faces. The divergences of the Kols from the Wedda and Fergusson do not therefore signify individual or isolated tendencies, but are paralleled by similar tendencies in other groups. When we consider the wide distances which separate the Kol, Wedda and Fergusson, the resemblances between the three appear remarkable, while the above mentioned divergences may prove partly at least to be of the nature of normal variations within members of the same group.

If we consider the deviations of the Wedda with those of the Paniyan and the Poulayan, we find in them a convergence or a tendency to deviate from the basis in the same sense in respect of Length br. Ind., Trs. Cr. fac. Ind., and capacity. There are a number of characters in respect of which the Paniyan and

the Poulayan behave to each other and to the Wedda in such a manner that where one of them agrees or tends to agree with the Wedda, the other diverges away. Of such characters we note in the case of the Paniyan, Length ht. Ind., Trs. Fr. par. Ind., Sag. Fr. par. Ind., Sag. Fr. occ. Ind., Sag. Par. occ. Ind., Sag. Par. Ind. Likewise the Poulayan diverge from the Wedda in Sag. Fr. Ind., Sag. Occ. Ind., Nas. Ind. and Long. Cr. fac. Ind. In Upp. fac. Ind., the Poulayan show a lower face than the Paniyan and the Wedda, in common with many another Anterior Indian group. Similarly, the Poulayan keep close to the lower range of medium high orbits, in common with a number of other tribes and are contrasted with the Paniyans who have high orbits and with the Wedda who approach the upper limit of medium orbits. We thus see that although the Paniyan and the Poulayan diverge from each other, their affinity with the Wedda in respect of a number of characters is undeniable. It is noted that in Breadth ht. Ind., though all the three groups exceed the basis group in their averages, the Paniyan leave the other two far behind and exceed the maximum variation of the basis group; the Poulayan deviating in as pronounced a manner in Sag. Fr. par. Ind. In Jugo-fr. Ind., the Wedda show a negligible higher value than the basis, while Paniyan and Poulayan deviate oppositely.

The divergent tendencies of the Paniyan mentioned above are traceable in other groups; viz., Length ht. Ind. in Bhuiya, Pollachi and Senoi; Trs. Fr. par. Ind. in Munda and Oraon; Sag. Fr. par. Ind., in Kadar, Munda and Santal; Sag. Fr. occ. Ind. in Oraon; Sag. Par. occ. Ind. in Bhuiya and Oraon; Sag. Par. Ind., in Kol, Munda, Santal, Bhuiya, Oraon and Pollachi; Jugo-fr. Ind. in Kol, Munda and Oraon.

Of the divergent tendencies of the Paniyan noted above, the Kadar agree in respect of one, viz., Sag. Fr. par. Ind.; the Munda in respect of four, viz., Trs. Fr. par. Ind., Sag. Fr. par. Ind., Sag. Par. Ind. and Jugo-fr. Ind.; the Oraon in respect of five, viz., Trs. Fr. par. Ind., Sag. Fr. occ. Ind., Sag. Par. occ. Ind., Sag. Par. Ind. and Jugo-fr. Ind.; the Kol in respect of two, viz., Sag. Ind. and Jugo-fr. Ind.; the Santal in respect of two, viz., Sag. Fr. par. Ind. and Sag. Par. Ind., Bhuiya in respect of three, viz., Length ht. Ind., Sag. Par. occ. Ind., Sag. Par. Ind.; the Pollachi in respect of two, viz., Length ht. Ind. and Sag. Par. Ind.; Senoi in respect of one, viz., Length ht. Ind.; Poulayan in respect of none. If we exclude the Poulayan, the above divergent tendencies which are scattered throughout the other groups may be said to be found concentrated—as it were, or rather in association in the Paniyan. The other southern groups do not conform to the Paniyan in this respect.

The divergences of the Poulayan are also of interest. Their tendency to exceed the mean of the basis group in Sag. Fr. Ind., is isolated; the same tendency in respect of Sag. Occ. Ind. is shared by the Kadar and Senoi only; also in respect of Nas. Ind. by the Senoi, the tendency being slightly indicated in the Munda. In Long. Cr. fac. Ind. also the Poulayan exceed the basis group

slightly in common with the Fergusson and Bhuiya, while the others deviate in in a pronounced manner in the minus direction commonly with the Wedda ; only among the Pollachi is this tendency not so strongly marked. In diverging from the Paniyan in Jugo-fr. Ind. the Poulayan agree notably with the Kadar, Pollachi, Senoi, Fergusson and Santal ; the tendency being slightly indicated in the Bhuiya.

The affinities between the southern and northern groups may be studied with profit by comparing the deviations of the Pollachi with those of the Bhuiya. In Length br. Ind. the Pollachi are close to the basis, while the Bhuiya correspond with all the other groups with longish heads. There is a significant tendency in the two groups to diverge in Sag. Par. occ. Ind., wherein the Bhuiya conform with the Paniyan and the Oraon in recording a slightly higher average than the basis group, the other tribes being ranged oppositely. In Breadth ht. Ind. and Sag. Fr. par. Ind. both groups deviate in the same sense from the basis, but the Bhuiya are in excess of its maximum and minimum variations of the two characters respectively. The same pronounced tendency is shown by the Paniyan and the Munda in Breadth ht. Ind., and the Poulayan in Sag. Fr. par. Ind. Otherwise the Bhuiya and the Pollachi exhibit very similar tendencies.

A comparison between the deviations of the Paniyan, Oraon and Santal in respect of sixteen characters showed a convergence or tendency to converge in Length br. Ind., Breadth ht. Ind., Sag. Fr. Ind., Sag. Par. Ind., Sag. Occ. Ind. and Nas. Ind., the minimum variation of the basis group for Length br. Ind. being exceeded by all the three groups, that for Sag. Occ. Ind. being exceeded by the Oraon. In four characters, viz., Trs. Fr. par. Ind., Sag. Fr. occ. Ind., Sag. Par. occ. Ind. and Jugo-fr. Ind. the Santal diverged from the Paniyan and Oraon which were more or less in the same sense. In Trs. Cr. fac. Ind. the Paniyan were very close to the basis while the Santal showed a more pronounced deviation, though in the same sense as the Oraons. Similarly in four characters, viz., Sag. Fr. par. Ind., Upp. fac. Ind., Orb. Ind., and capacity the Oraon diverged from the Paniyan and the Santal. In Length ht. Ind. the Paniyan diverged from both Oraon and Santal, which deviated in the same sense. Thus the Paniyan and Oraon had the same tendency in ten characters, the Paniyan and Santal in the same number of characters, the Santal and the Oraon agreeing in eight characters only.

In the case of the Santal and Kadar, there were only three distinct divergences in a comparison of fifteen characters, viz., in Sag. Par. Ind., Sag. Occ. Ind., and Upp. fac. Ind. In Sag. Par. Ind. the Santals with + 20 had the same tendency as shown by the Kol, Munda, Bhuiya, Oraon, Paniyan and Pollachi in more or less pronounced form ; while the Kadar with - 30 agree with Wedda, Fergusson, Poulayan and Senoi. In Sag. Occ. Ind. the Kadar commonly with the Poulayan and Senoi showed a slightly higher value than the basis, the others tending oppositely. In Upp. fac. Ind. the Santals in common with the Senoi

showed a negligibly higher value than the basis (with the Paniyans not far away), while the Kadar and others deviated oppositely.

A comparison between the Poulayan, Senoi and Wedda in seventeen characters showed a convergence or tendency to converge in eight characters, viz., Length br. Ind., Breadth ht. Ind., Trs. Fr. par. Ind., Sag. Fr. par. Ind., Sag. Fr. occ. Ind., Sag. Par. occ. Ind., Sag. Par. Ind. and capacity, the Poulayan exceeding the minimum variation of the basis group in Sag. Fr. par. Ind. The Poulayan diverged commonly from Senoi and Wedda in Sag. Fr. Ind., Upp. fac. Ind., Orb. Ind. and Long. Cr. fac. Ind.; Wedda and Poulayan diverged from the Senoi in Length ht. Ind. and Trs. Cr. fac. Ind., while Senoi and Poulayan commonly diverged from the Wedda in Sag. Occ. Ind., Nas. Ind. and Jugo-fr. Ind. Thus Senoi and Wedda deviated in the same sense in twelve characters and diverged in five; Senoi and Poulayan deviated in the same sense in eleven characters and diverged in six; while Poulayan and Wedda deviated in the same sense in ten characters, diverging in seven.

Relative deviations of the Kol etc., from the Wedda basis (Table IV).

We were enabled to make a more intimate comparison of the divergences of the Anterior Indian tribal groups by using Prof. F. Sarasin's recently completed data on ten Wedda skulls as the basis group. This series was especially advantageous as it had the full complement of all the characters compared and at the same time gave us the means of testing the true affinities of the Anterior Indian aborigines to the well known tribe from which it originates. Attention is nevertheless drawn to the differences shown by the two Wedda series in respect of the means of some of the characters.

A comparison was made in the first instance of the Fergusson, Rajput and Kol by means of Mollison's "Abweichungs-diagramm." The resemblances of the three groups again appeared remarkable. In Sag. Fr. occ. Ind., Fr. Sag. arc. Ind. and Sag. Occ. Ind., the Kol and Fergusson are closer to each other than to the Rajput. In some respects, the Kol and Rajput are closer to each other than to the Fergusson series, viz., Sag. Par. Ind. and Jugo-fr. Ind.; the same may also be said of Long. Cr. fac. Ind., in which the Kol and the Rajput slightly exceed the basis group and the Fergusson correspond to its maximum variation. In Trs. Cr. fac. Ind. the Kol practically conform to the basis while the Fergusson and Rajput deviate oppositely. In capacity the Rajput though showing a minus deviation are close to the basis while the other two groups deviate in opposite directions. As the capacity of the Kol skulls were measured by Turner and of the other two by Müller it is not improbable that the figures are affected by differences in technique.

The figures in Table IV help us to find out whether the divergences of the Kol from the Fergusson series are due to isolated tendencies. As regards Sag. Par. Ind. all the groups excepting the Fergusson, Kadar, Poulayan and Senoi deviate from the Wedda in the same sense as the Kol. (Note the change in value of the two basis groups!) In Jugo-fr. Ind., the Munda, Oraon and

Paniyan deviate from the basis in the minus direction same as the Kol and Rajput, whereas Pollachi and Senoi deviate in opposite direction; the other groups being disposed on either side of the basis in close proximity to it. In Long. Cr. fac. Ind., the Bhuiya, Pollachi and Poulayan more or less show the same tendency as the Fergusson series to deviate in a pronounced manner from the basis; the Oraon actually conform to the basis, while the other groups show the same slightly marked tendency to exceed it, same as the Kol and Rajput. (The deviation of the Kadar is questionable owing to the inadequacy of the average.) In Trs. Cr. fac. Ind., the Oraon and the Kadar show the same negligible tendency to exceed the basis, the Paniyan and the Poulayan to fall short of it (likewise the Bhuiya!), while the Munda and Santal deviate in the same sense as the Rajput, the Pollachi and the Senoi deviating oppositely as the Fergusson series. In capacity the Munda actually conform to the basis with the Rajput and Santal very close to it, all the other groups excepting the Paniyan and the Fergusson exceeding the basis in a more or less pronounced manner.

In all other characters the three groups converge or exhibit similar tendencies. The tendency to low faces (Euryên) is more pronounced in the Kol than in the other two groups, but not so pronounced as in the Munda and the Kadar. (All three descend below the minimum variation of the basis group!). This tendency is not marked in the Paniyan, least marked in Santal and Senoi (Pollachi and Fergusson should be reckoned here!), while the Rajput, Bhuiya, Oraon and Poulayan show it in a moderate degree. The tendency of the Kol to exceed the minus variation of the basis group in respect of Orb. Ind. is shared by the Munda, Bhuiya, Oraon, Pollachi and Poulayan, the Paniyan and Senoi negligibly exceeding the basis group. The other groups show moderately marked tendencies to deviate in the same sense as the Kol. In Nas. Ind. the Oraon actually conform to the basis, while the Munda, Poulayan and Senoi exceed it in more or less pronounced degrees. The others deviate oppositely in common with the Kol, though none descends below the limit of the minus variation of the basis like the Kol.

A comparison between the Kol, Oraon and Paniyan in respect of twenty-one characters showed similar tendencies in Length br. Ind., Trs. Fr. par. Ind., Sag. Fr. occ. Ind., Sag. Par. occ. Ind., Fr. Sag. arc. Ind., Par. Sag. arc. Ind., Occ. Sag. arc. Ind., Sag. Par. Ind., Trs. Cr. fac. Ind., and Jugo-fr. Ind.; to be mentioned in this connexion is Long. Cr. fac. Ind., wherein the Oraon correspond to the basis while the other groups show slightly higher values than the basis. The Oraon diverged from the Paniyan and Kol in four characters, viz., Length ht. Ind., Sag. Fr. Ind., Sag. Occ. Ind. and Nas. Ind. The Oraon and Kol diverged commonly from the Paniyan in six characters, viz., Breadth ht. Ind., Hor. cirm. ht. Ind., Sag. Fr. par. Ind., Upp. fac. Ind., Orb. Ind. and capacity. If the similarities are recognized in eleven characters, then the Oraon agree

with the Kol in seventeen of the twenty-one characters, and with the Paniyan in eleven characters only. The Paniyan and Kol agree in fifteen characters.

On comparing the Santal, Oraon, Bhuiya, Munda and Kol, the five groups were found to have similar tendencies in seven of the twenty-three characters considered, viz., Length br. Ind., Trs. Par. occ. Ind., Sag. Fr. occ. Ind., Occ. Sag. arc. Ind., Sag. Par. Ind., Upp. fac. Ind. and Orb. Ind. In five characters the Santal diverged from some of the other groups commonly with the Kol, viz., Breadth ht. Ind., Hor. cirm. ht. Ind., Fr. Sag. arc. Ind., Sag. Fr. Ind. and Nas. Ind. In eleven characters, viz., Length ht. Ind., Forhd. br. Ind., Trs. Fr. par. Ind., Sag. Fr. par. Ind., Sag. Par. occ. Ind., Par. Sag. arc. Ind., Sag. Occ. Ind., Trs. Cr. fac. Ind., Fr. biorb. Ind., Jugo-fr. Ind. and capacity the Santal diverged away from the Kol. Similarly in Length ht. Ind., Sag. Fr. Ind., Sag. Occ. Ind., Nas. Ind. and Fr. biorb. Ind. the Oraon diverged away from the Kol; while in Breadth ht. Ind., Hor. Cirm. ht. Ind., Forhd. br. Ind., Trs. Fr. par. Ind., Sag. Fr. par. Ind., Sag. Par. occ. Ind., Fr. Sag. arc. Ind., Par. Sag. arc. Ind., Trs. Cr. fac. Ind., Jugo-fr. Ind. and capacity the Oraon diverged in the same sense as the Kol. The Bhuiya diverged away from the Kol in Breadth ht. Ind., Hor. cirm. ht. Ind., Fr. Sag. arc. Ind., Sag. Fr. Ind., Sag. Occ. Ind., Trs. Cr. fac. Ind. and Fr. biorb. Ind., and deviated in the same sense as the Kol in Length ht. Ind., Forhd. br. Ind., Trs. Fr. par. Ind., Sag. Fr. par. Ind., Sag. Par. occ. Ind., Par. Sag. arc. Ind., Nas. Ind., Jugo-fr. Ind. (slightly indicated), and capacity. The Munda deviated in the same sense as the Kol in Length ht. Ind., Forhd. br. Ind., Trs. Fr. par. Ind., Sag. Par. occ. Ind., Fr. Sag. arc. Ind., Sag. Fr. Ind., Fr. biorb. Ind. and Jugo-fr. Ind., and diverged from the Kol in Breadth ht. Ind., Hor. cirm. ht. Ind., Sag. Fr. par. Ind., Par. Sag. arc. Ind., Sag. Occ. Ind., Nas. Ind., Trs. Cr. fac. Ind. and capacity. Thus of the twenty-three characters, the Santal agree or tend to agree with the Kol in twelve characters and diverge in eleven; the Oraon agree or tend to agree with the Kol in eighteen characters and diverge in five; the Bhuiya agree or tend to agree with the Kol in sixteen characters and diverge in seven; while the Munda agree or tend to agree with Kol in fifteen characters and diverge in eight.

A comparison was made of the Poulayan, Pollachi, and Kadar with the Kol for examining the affiliations of the three southern groups. These were further compared with the Senoi for determining if the divergences of the three groups from the Kol were taking place in a known direction or were of independent nature. In the first place we eliminated four of the twenty characters, viz., Length br. Ind., Breadth ht. Ind., Sag. Occ. Ind. and Upp. fac. Ind. in which all the groups showed similar tendencies. In five of the remaining sixteen characters, the Kol stood out from all the other groups, viz., Sag. Fr. occ. Ind. (with the Poulayan conforming to the basis), Sag. Par. occ. Ind., Par. Sag. arc. Ind., Occ. Sag. arc. Ind. (with the Pollachi conforming to the basis) and Jugo-fr. Ind. In eleven characters some of the groups deviated from the basis in the same sense as the Kol, while one or several of the others deviated oppositely,

There were several characters in which one of the groups stood out from the others under comparison. Of these the Kadar had the largest number, viz., Length ht. Ind., Sag. Fr. par. Ind. and Long. Cr. fac. Ind. As the tendency of the Poulayan to exceed the basis group in Trs. Fr. par. Ind. in the same sense as the Kadar (with the other groups deviating in the minus direction) is negligible, this index is also to be mentioned in this connexion. The Senoi stood out from the other groups in Orb. Ind.

We thus had six characters in which more than one group was found diverging from the Kol. These were Hor. cirm. ht. Ind. and Nas. Ind. in which the Poulayan and Senoi deviated in the same sense; Fr. Sag. arc Ind. and Sag. Par. Ind., in which the Poulayan, Kadar and Senoi deviated in the same sense; Sag. Fr. Ind. in which the Pollachi and the Senoi deviated in the same sense and Trs. Cr. fac. Ind. in which the Senoi, Pollachi and Poulayan (slightly indicated), deviated in the same sense. In the five characters in which the Kol stood out from the other groups, the association of the latter with Senoi was also clear except for Poulayan in Sag. Fr. occ. Ind. and Pollachi in Occ. Sag. arc Ind., the two groups corresponding to the basis.

The comparison disclosed therefore the more or less marked tendency of the Kadar, Poulayan and Pollachi to diverge from the Kol in the direction of the Senoi. This tendency seems to be most marked in Poulayan, while the Kadar show a few independent divergences.

The significance of the relative deviations.

The preceding analysis of the two series of relative deviations points to the close affinities of the Fergusson, Wedda and Kol in respect of craniological characters compared. The affinities between the Fergusson, Wedda and Rajput skulls have been already pointed out by Müller who instituted a comparison of their morphological and metric characters. From his study of the "Abweichungsdiagramms" of the three groups he concludes: "Der Verlauf der drei mittleren Variationslinien zeigt einmal, dass zunächst unter den Gruppen selbst nahe verwandtschaftliche Beziehungen bestehen, sodann kommen aber auch wieder die engen Beziehungen der drei Gruppen zu den Weddaschädeln von Ceylon zum Ausdruck. Mithin kann gesagt werden, dass in der Bevölkerung von Rajputana (Zentral Indien) und Nepal sowie in Seran und Normanby-Fergusson ein dolichocephales Kleinwuchselement steckt, das den Wedda von Ceylon entspricht." The same element is represented in the Kol perhaps in a purer form, though we would not say the same of all the Kol population of Anterior India. The limited scope of our work, however, does not permit us to trace the affinities of the widely distributed race whose scattered fragments we have in the populations under discussion;⁶⁵ nor to study the nature of the variations that are found between its numerous members outside our Fatherland.

65. Rivet, P.; Les Océaniens. *Jour. Asiatique*, 1933, pp. 235-256. Cf.

Nevertheless the divergences of the Kol, Wedda and Fergusson from one another assume a peculiar significance when we find that similar tendencies are present in some of the Anterior Indian tribes. If one of them differ from the Kol or the Wedda in some craniological character or characters, that by itself can not be evidence of miscegenation in that tribe; there may be other groups far away who may show genetically the same characters. One must however reckon with the possibility that such resemblances may be of independent origin. There is at the same time no reason to believe that the ancestors of the present day "Binnen-Weddas" and the Keonjhar Kols did not normally possess a certain degree of variability among themselves.

One aspect of this variability at least is illustrated by some of the divergences of the Kol. For example, they are not so dolichocephal as the Wedda. The same could be said of several other Anterior Indian tribes. As Martin pointed out: "Auch die Kymotrichen Vorder-Indiens haben nicht durchweg die gleiche Kopfform, obwohl, allerdings eine leichte Dolichokephalie und Mesokephalie vorzuherrschen scheint. So wird, um nur einige Zahlen zu nennen, der L. B. I.-der Yeruva mit 73.6, derjenige der Paniyan mit 74.0, der Irula mit 75.8 angegeben" (1905).⁶⁶ In the same sense is the tendency to have low faces (Euryēn) noticed in some of the tribes, though not always so pronounced as in the Kol, Munda and Kadar; also the tendency to have medium high orbita, (close to the lower limit of Mesokonch).

Another clue to the nature of these normal variations is offered by the Paniyan. In comparing the deviations of this tribe with those of the Wedda from the Negro basis, it was found that some of its divergences from the Wedda are also represented in the other tribes, mostly in the Oraon and Munda. An examination of the deviations of the Paniyan, Oraon and Santal from the Negro basis, and likewise the deviations of the Paniyan, Oraon and Kol from the Wedda basis showed that the Paniyan had similar tendencies as the more northern groups in respect of a large number of characters. A possible explanation of their divergences from the Wedda compared to the Negro basis lies in their inbred character.⁶⁷ That there is considerable affinity otherwise between the northern and southern tribes was apparent in the comparisons of the deviations of the Bhuiya and Pollachi, and the Santal and Kadar from the Negro basis. These groups were of course specially selected for such comparison and

Schlaginhaufen, O.—Schädel aus dem nordwestlichen Siam. *Amer. Jour. Phys. Anthropol.* XXVI, 1940, pp. 367-368, abstract in *Anthrop.* XXXV-VI, 1940-41, p. 403.

66. Martin, R.: *op. cit.* p. 1035.

67. Macfarlane, E. W. E. Blood-Group Distribution in India with special reference to Bengal, *Journ. of Genetics*, XXXVI, 1938, pp. 225-237.

serve only to illustrate the convergent tendencies of the variations prevailing in the north as well as in the south.

Yet another kind of variation is noticed in the Poulayan. In comparing the deviations of the Paniyan and the Poulayan from the Negro basis we noticed that while both groups shared a number of similar tendencies with the Wedda, there are a number of characters in respect of which they behave to each other and to the Wedda in such a manner that where one of them agrees or tends to agree with the Wedda, the other diverges away. It was also found that the divergences of the Paniyan from the Wedda mentioned above corresponded to similar divergences from the Wedda noticeable in other groups but none in the Poulayan. Among the divergences of the Poulayan from the Wedda considered from the Negro basis were a number which had their correspondence in the Kadar, Senoi, Pollachi, Fergusson, besides Santal, Bhuiya and Munda among the northern groups. In the comparison of the deviations of the Poulayan, Pollachi, Kadar with Kol and Senoi, we found after elimination of all the characters in which the three southern groups agreed or tended to agree with Kols, five characters in which all diverged from Kols and six characters in which two or three groups diverged commonly from the Kols. In these eleven characters, the Senoi were clearly associated with the groups diverging from the Kol, above all with the Poulayan. The Kadar showed some independent divergences from the Kol in addition to a number of tendencies commonly shared with the Senoi. This, in addition to the fact that no single group diverged from the Kol in all the characters and also that the number of characters in which all the groups diverged commonly from Kol, suggests that the Poulayan, Pollachi and Kadar are differentiating along individual lines in the direction of the Senoi, the Kadar only less so. A consideration of the deviations of the Poulayan, Senoi and Wedda from the Negro basis also suggests the same probability, besides indicating that the Senoi may have differentiated in the same manner.

A study of the deviations of the Oraon, Bhuiya, Munda and Santal from the Wedda basis and comparison with similar deviations of the Kol indicated the affinities of the Oraon, Bhuiya and Munda in respect of a large number of characters with the Kol, while the Santal showed more divergences. A comparison of the deviations of the Paniyan, Oraon and Santal and those of Santal and Kadar from the Negro basis indicated closer affinities between the Santal and the southern groups considered. The deviations of the Oraon and Paniyan compared with those of the Kol from the Wedda basis showed more similarities between the Oraon and Kol than between Oraon and Paniyan, though both Oraon and Paniyan agree in a large number of characters with Kol. This corroborates Turner, who from his study of the same Oraon, Munda, Bhuiya and the Kol crania (besides a number of others) concluded as follows: "Judging, therefore, from the characters of the skull one draws the conclusion that there is no difference of moment in the form and proportions of this part of

the skeleton between the Dravidian and Kolarian tribes and support is given to the view of their essential structural unity as advocated by Mr. Risley."⁶⁸

Variation in the East-central and the Southern Tribes.

Comparison with the Wedda, Kol and Fergusson crania indicated certain more or less marked divergences both in the Northern or East-central and the Southern groups in respect of the cranial characters considered.⁶⁹ There is no reason to conclude that all these divergences are due to one and the same cause. In the case of the Paniyan, prolonged isolation and inbreeding, which appear to have affected their blood-group distribution, may be held responsible for its divergences from Wedda and Kol. We can not say the same of the Santals. We recall Koller's concluding remarks on the affinities of the Santal crania: "Trotz der sehr geringen Schädelzahl ergibt sich unzweifelhaft dass bei den Santal ein primitives Rassen-element vorkommt, wenn nicht vorherrscht, das viele Merkmale der "austromelanesischen Rasse" P. Sarasins, bezw. des australiformen Rassenkreises im Sinne von G. Sergi, B. Rivet, V. Lebzelter und Anderen in abgeschwächter Ausprägung zeigt. Daneben ist der Einfluss der "Ostmediterranen" bezw. "indiden" (v. Eickstedt) Rasse deutlich, wie dies bei einem Primitivstamm, der weitgehende Bindungen mit der indo-arischen Kultur eingegangen ist, kaum anders zu erwarten war." That other East central aboriginal peoples have been similarly exposed to Indo-Aryan culture from ancient times is suggested by references to the Munda in the Mahābhārata, III, 253. 15243 (Calcutta), VI, 56.2410 and the Vāyupurāṇa 45.123.⁷⁰ From the not uncertain testimony of recent miscegenation among the Oraons, Mundas, Gonds etc. (*ante*), it is tempting to conclude that the divergences of the Santals and other East-Central aborigines from the Wedda-Kol-Fergusson are due to mixo-variation arising from crossings with other races. The high relief of the root of the nose and the nasal skeleton from the facial plane of Müller's Rajput

68. Turner, Sir Wm.—*Op. cit.*

69. The divergences between the northern and southern aborigines are so strong in other characters, that in his interpretation of the Coefficients of Racial Likeness Guha speaks of two distinct factors in the two groups, besides the Negrito in the South. He designates the northern aborigines as "Nisadic," who are "lighter in skin-colour, less prognathic and having supraorbital ridges not so stoutly developed" as the second factor among the southern aborigines. In the latter, "slightly taller, darker in skin-colour, more prognathic with stoutly developed supra-orbital ridges," he recognises a distinctly "Australoid strain." The divergences between the northern and southern tribes in respect of cranial characters may prove to be another aspect of essentially the same phenomenon.—Guha, B. S.: *The Racial Affinities of the People of India*, XVI^e Congr. Int. d'Anthrop., Bruxelles, 1935 (1936).

70. Lévi, S.: *loc. cit.*

skull no. 1274 from Narsinghpur (see photograph on p. 264) suggests that like the Santal, the Rajput series is not entirely free from the same East-Mediterranean strain. "Rajput" is not a tribal designation, but characterises an ethnic group composed of diverse racial elements. Almost certainly the skulls in question belonged to issues of Rajput wanderers from matings with the older settled population, perhaps the aborigines. Why then do the Rajput crania stand closer to the Kol than the Santal? We can only conclude that more light is necessary on the East-central aborigines before the mystery can be solved.

With the divergences of the southern tribes, viz., the Pollachi, Kadar and above all the Poulayan, though the possibility of miscegenation is not ruled out, we are definitely on the track of another phenomenon. Two of the above tribes, viz., the Kadar and Poulayan, have been claimed to contain a "submerged" Negrito strain in mixture with a primitive dolichocephalic race. We quote Guha at length: "I have drawn attention elsewhere⁷¹ to the presence of frizzly hair among the Kadars of Perambiculam and Vellaripallam. During my enquiries in the interior of the Cochin and the adjoining Anaimalais hills, I found 14 individuals among the Kadars and 1 among the Pullayans with unmistakably frizzly hair It may therefore be presumed that the remnants of the Negrito race now found among the Semangs and the Andamanese, were much more widely spread at one time and extended well into the Indian continent—a few survivals being still seen in isolated 'pockets' such as among the Kadars of Perambiculam and the Pullayans of the adjoining hills. . . . Lapicque carried out some extremely interesting investigations among the Kadars, Malasers and Pullayans in the Anaimalais hills when he visited two Kadar settlements and measured 32 adult men and 24 adult women [1903-04]. His researches convinced him that the existence of "une race nègre primitive" among these people is incontestable.⁷² Accepting the definition of Quatrefages, however that the negritos are brachycephalic he remarks, "J'arrivais alors à la conception d'une race nègre primitive voisine des Negritos, mais distincte par l'indice cephalique dolichocéphale" [1905]. In my notes published in *Nature* in 1928-29 referred to before I stated that though the mean Cephalic Index of the Kadars was dolichocephalic among the individuals with frizzly hair there was a marked tendency for a rise in the index to mesorrhiny [? mesocephaly] as shown by two individuals having 77.34 and 79.29 as the values of their index which in my opinion indicated that the basis of this negrito type was probably brachycephalic or at least meso,—as in the Semangs (mean C. I. 7. 9), but large admixture with a primitive dolichocephalic race had affected the general shape

71. Guha, B. S.: Negrito Racial Strain in India, *Nature*, May 19, 1928 and June 22, 1929.

72. Lapicque, L: Note sommaire sur une mission ethnologique dans le Sud de l'Inde, *Bull. du Museum d'Histoire Naturelle*, II, Paris, 1905, pp. 283-285.

of the head. To the same admixture was probably also due the long spirals now seen among most of the Kadars and Pulayans with frizzly hair, in two individuals . . . short spirals similar to 'h' instead of 'g' of Martin's scheme were noticed. At the present day these Negritos are found to be closely similar to the Melanesian type both in hair and head form, but judging from the presence of two men with short spirals and higher Cephalic Index, it would seem that the original type was not probably unlike that of the Semangs and the Andamanese. . . ."⁷³

Unfortunately, owing to the war conditions, the only statement of Prof. Lapicque on this problem we have access to is an extract quoted by Thurston. It was published in 1906 and runs as follows :

"Dans les montagnes des Nilghirris et d'Anémalé, situées au cœur de la contrée dravidiennne, on a signalé depuis longtemps des petits sauvages crépus, qu'on a même pensé pouvoir, sur des documents insuffisants, identifier avec les negritos. En réalité, il n'existe pas dans ces montagnes, ni probablement nulle part dans l'Inde, un témoin de la race primitive comparable, comme pureté, aux Andamanais, ni même aux autres Negritos. Ce que l'on trouve là c'est simplement, mais c'est fort précieux, une population métisse qui continue au delà du Paria la série générale de l'Inde. Au bord de la forêt vierge ou dans les collines partiellement défrichées, il y a des castes demi-Parias, demi-sauvages. La hiérarchie sociale les classe au-dessous du Paria. Eh bien, dans ces groupes, les chevelures sont en général frisées, et on en observe quelques-unes qu'on peut même appeler crépues. On a donc le moyen de prolonger par l'imagination la série des castes indiennes jusqu'au type primitif qui était (nous n'avons plus qu'un pas à faire pour le reconstruire), un Nègre. . . . Nous sommes arrivés à reconstituer les traits nègres d'un type disparu en prolongeant une série graduée de métis. Par la même méthode nous pouvons déterminer théoriquement la forme du crâne de ce type. Avec une assez grande certitude, je crois pouvoir affirmer, après de nombreuses mesures systématiques, que le nègre primitif de l'Inde était sousdolicho-céphale avec un indice voisin 75 ou 76.⁷⁴ Sa taille, plus difficile à préciser, car les conditions de vie modifient ce caractère, devait être petite, plus haute pourtant que celle des Andamanais. Quant au nom qu'il convient de lui attribuer, la discussion des faits, sociaux et linguistiques, sur lesquels est fondée la notion de dravidien, permet d'établir que ce nègre était antérieur aux dravidiens ; il faut donc l'appeler *Prédravidien*,

73. Guha, B. S. : *Op. cit.*, 1935, pp. l-li.

74. *Sousdolichocéphale* or Sub-dolichocephaly is the principal group of mesocephals ranging from 75.0 to 77.76, in use chiefly in the French school and also the Russian.—Martin, R. : *Lehrbuch d. Anthropologie*, II. Jena, 1928, p. 649.

ou, si nous voulons lui donner un nom qui ne soit pas relatif à une autre population, on peut l'appeler *Nègre Paria*."⁷⁵

Prof. Lapicque then leaves us in no doubt that he found no negrito population in purity, comparable to the Andamanese and other negritos, but only a "*métisse*" population, half savage and half Paria. From these he proceeded to reconstitute by measurements what he considered to have been the Negro-Paria race, subdolichocephalic in head form (C. I. 75-76), which he assumed to have disappeared probably by prolonged and gradual intermixture. Of 23 Kaders measured by Thurston with an average C. I. of 72.9, varying from 69 to 80, only one reached 80. Nineteen Kadar ♂ measured by Cipriani yielded an average C. I. of 72.6, varying from 69.6 to 76.7; also 12 Kadar ♀ measured by the same investigator with an average C. I. of 73.2 varied between 69 and 77.6. In the 59 cases of Kaders on record, there is no segregation of brachycephaly and there does not seem to be any in Guha's Kadar series. Guha's Kadar data, the publication of which is eagerly awaited, may be expected to disclose whether among the head forms prevailing in this tribe there is any brachymorph type, which could be regarded as intrusive and associated with the Negritos. Meanwhile it should be mentioned that the occurrence of a few individuals, brachycephalic according to Length br. Ind. of the head or the skull, among the Kadar and Poulayan would not necessarily prove the existence of a submerged Negrito strain. Australian crania have been recorded with brachycephalic Indices, e. g. a female with C. I. 81.8 (Pösch) and another of the same sex from Queensland, with C. I. 81.4 (Hrdlička), which are otherwise purely Australid. Gerhardt points to a typical Wedda skull (no. 30 in F. Sarasin's newly completed data) with C. I. 79.8; and the Rajput skull no. 1276 with C. I. of 77.8, which would correspond to 81 and 79 respectively in the living and thus reach or cross the range of brachycephaly.⁷⁶ Populations with an average C. I. of 75 or 76 would naturally contain some brachycephalic individuals within its range of variation, e. g. 24 Poulayans measured by Thurston with mean C. I. of 76.3 and varying 72.3-83. Unless nature can be shown to abhor races or varieties with mesocephalic averages, there is no need to regard brachycephalic individuals with their range of variation as evidence of miscegenation with a race or population having a brachycephalic average, provided of course miscegenation is not otherwise indicated.

Meanwhile the significance of our own data should not be overlooked. In our analysis of the deviation of the Poulayan, Pollachi, Kadar, Senoi and Kol

75. Lapicque, L. *Les Nègres d'Asie, et la race Nègre en général*. Rev. Scient. VI. Juli, 1906, cited by Thurston, E. in *Castes and Tribes of Southern India*, I. Madras, 1909, pp. xlviii-xlx.

76. Gerhardt, K.: *Zur Frage Brachykephalie und Schädelform*, Zeitschr. f. Morphol. u. Anthropol. XXXVII, 1938, pp. 277-489.

from the Wedda basis we found a number of characters in which the Poulayan, Pollachi and Kadar diverged from the Kol and deviated from the Wedda in the same sense as the Senoi. We found also a few characters in which the Kadar diverged from the Kol independently of the Senoi. In comparing the deviations of the Poulayan, Senoi and Wedda from the Negro basis we found that Senoi and Wedda deviated in the same sense in twelve of the seventeen characters compared; Senoi and Poulayan deviated in the same sense in eleven characters and diverged in six; while Poulayan and Wedda deviated in the same sense in ten characters, diverging in seven. It is noteworthy, however, that both Wedda and Senoi are Kymotrichous groups, while some at least of the Kadar and Poulayan have frizzly (? lockerkraus) hair.

In his comparison of the affinities and divergences of the Wedda and the Senoi, Martin (1905) pointed out that the two agreed in stature, skin colour, hair form etc., but there were differences in body proportions and in some significant details of skull form, viz., the strong development of the glabella, a relatively flat forehead, flat vertex, steep build of the sidewalls and the relatively unprominently developed part of the cranium lying behind the plane of the ears—characters which are typical of the Wedda skull and are absent in the Senoi. These are according to him exactly the characters in which the Wedda approach the different forest and hill tribes of Anterior India, while the Senoi on the other hand line up with the south-east Asiatic forms. Martin concludes: Ich finde für die vorhin erwähnte Tatsache nur eine einzige Erklärung. Wenn die Haarform, wie man heute annimmt [Virchow, 1896], wirklich das sich am zähesten vererbende Merkmal darstellt und wenn daher die beiden Rassen in der Tat genetisch zusammengehören, dann muss die eine oder andere Gruppe durch irgendwelche uns verborgene Einflüsse in den erwähnten Charakteren abgeändert worden sein. Dabei braucht man noch nicht einmal an Mischung zu denken; es kann sich die extremere, gleichsam prononziertere Schädelform der Wedda auch durch Jahrtausende währende Inzucht in einem abgeschlossenen, gleichförmigen Milieu herausgebildet haben. Wahrscheinlicher ist aber vielleicht, dass sich die Senoi umgestaltet haben, weil der strengweddaische Typus sich noch in viel grösseren Verbreitung findet. Es wird übrigens keine der beiden Gruppen heute mehr genau den Typus der Grundform repräsentieren, von der sie ausgegangen sind. Machen wir also diese Annahme, so können wir auch die Senoi zu der grossen weddaischen, d. h. vor-dravidischen Menschengruppe Indiens rechnen."⁷⁷

The problem of classifying the Senoi was only one of the problems that Martin had come upon in his research tour in the Malay Peninsula. With his flair for observing and classifying phenomena, the great *savant* noticed another series of affinities which have ultimately revolutionised the fundamental concepts

77. Martin, R.: *Op. cit.*, 1905, pp. 1031-1033.

of modern raciology. His comparison of the Length br. Ind., Length-auricular ht. Ind., Total fac. Ind., Nas. Ind., body height and body proportions of the Senoi and the Semang led to the discovery of no characteristic divergence between the two; the only real differences lay in hair-form and skin-colour. He observed: "So sind wir jedenfalls einstweilen gleichsam an einem toten Punkt angelangt und werden zu einer prinzipiellen Entscheidung gedrängt, ob wir der Haarform oder der Kopf- und Gesichtsform die grössere Bedeutung für die Rassendiagnose zuerkennen wollen. Je nach dem die Antwort auf diese Frage ausfällt, muss natürlich die systematische Stellung der Semang zu den Senoi eine grundverschiedene werden. In früheren Zeiten würde man sich wohl einstimmig für die grössere Bedeutung der Kopfform ausgesprochen haben, heute werden sich mehr Stimmen zu Gunsten der Haarform geltend machen. Einzelne Forscher neigten zu verschiedenen Zeiten bald mehr der einen, bald mehr der Anderen Auffassung zu, so Virchow, der früher den Schädelmassen für die Rassendiagnose die grösste Bedeutung zuschrieb, während er später, gerade anlässlich der Untersuchung des Blandashaares, den Haarcharakter für die Feststellung der Rassenverwandtschaft in erste Linie stellte."⁷⁸

Martin himself was of opinion that the knowledge of the effects of crossing and mixture acquired at his time did not suffice for a definitive answer to the question—to which of the characters, hair form or head and facial form, decisive significance should be attributed for racial diagnosis.

This difficulty has been overcome to-day by the mutation hypothesis of Martin's pupil, E. Fischer. According to this hypothesis the brachycephaly factor and the spiral hair factor are independent of each other. Fischer writes: "The mutation which led to the formation of a spirally winding hair from out of the smooth made its appearance there, where the [African] negrid stem constituted itself as such. It seems to me that this factor multiplied itself twice within this stem (alleles) viz., at the origin of the Bushmen and at the possibly parallel origin of the Central African pygmies. In the stem of the Australids, I conceive the Negritos (Semang, Andamanese, Philippinos) as distinguished by the self-same hair-mutation from the Weddids. Such a mutation appearing independently for the second time brought into existence the Papua Melanesians, and for the third time the Tasmanians. In the stem of the Europids, it did not come to an independent group formation; nevertheless it did not appear altogether seldom in individuals. Finally in the Mongoloid stem it did not appear at all."⁷⁹

It seems probable that among the Kadar and the Poulayan, members of the Weddid (Fischer) branch of the Australid stem, *the same spiral factor is appearing independently by mutation*. Only when we know to what percentage the

78. *Ibid.*, pp. 412-416; 520-521.

79. Fischer, E.: Die gegenseitige Stellung der Menschenrassen auf Grund der mendelschen Merkmale. Comitato Ital. per lo Stud. dei Problemi della Popolazione. Roma, 1932.

Kadar and Poulayan are distinguished by "lockerkraus" hair could we say if this is a mass phenomenon at all. (According to Guha this seems to be gradually dying out.) It is significant that this mutation is appearing in groups more or less resembling the Senoi or diverging from the Kol and the Wedda in respect of certain cranial characters in the direction of the Senoi, who stand close to the Semang of "lockerkraus" hair. The probability that the frizzly hair of the Kadar and Poulayan is a mutation and not due to miscegenation with a proper ulotrichous negrito race is strengthened by the fact that the Weddids (Fischer) or Proto-australoids (Guha) resemble them in many respects, quite apart from craniological characters. The latter are described by Guha as "a dark short-statured type with long head and broad flat nose. The stature is not so short as that of the Negritos but the skin colour is much the same, varying from tawny to dark chocolate brown. In the shape of the nose and the face there is no appreciable difference, there being the same tendency in the face to project forwards, and in both, the lips are thick and often everted. What distinguishes the latter, however, from the Negritos is the form of the hair which in general is wavy and sometimes curly but never frizzly."⁸⁰

One question still remains to clear up! It is clear that in the Kadar and Poulayan the *brachycephaly* factor has not mutated along with the *spiral hair* factor, or does not at least constitute a mass phenomenon. What then do their divergences from the Kol and Wedda in respect of cranial characters noticed above signify? They must have changed, as Martin presumed in the case of the Senoi, from the Weddas! But what sort of a change! Does it affect the genetical character of the populations concerned? Or should we presume the change to be due to environmental influences operating within the range of reaction of the hereditary characters, as Fischer presumes in the case of South German brachycephaly.⁸¹ Here further material is needed before a definite conclusion can be arrived at.

Résumé.

1. In the preceding discussion of Macfarlane and Sarkar's attempt at classifying a number of Indian aboriginal tribes into two Dravidian speaking races and another race or population of Mundari speakers we have shown that the anthropometric data used by the authors was not reliable in several instances, and that the nature of variations which occur normally within members of the same race or group had not been taken into account.
2. Quite apart from the question whether blood-group data could be employed for racial classification where small populations socially grouped in tribes, living more or less in isolation, wandering about from time to time and in some

80. Guha, B. S.—The Aboriginal Races of India, *Science and Culture* IV, 1939, pp. 677-683.

81. Fischer, E.—*op. cit.*, 1936, p. 170.

cases exposed to miscegenation are concerned, the interpretation of the blood-group data was sometimes open to question. In some cases when a tribe (or a fragment of a tribe) showed any marked rise in B%, miscegenation has been taken to be the cause though no evidence has been put forward to show that miscegenation was the cause. In the case of the East-central tribes, Dravidian- or Mundari-speakers, no attention has been paid to the available evidence of miscegenation. While we do not naturally take for granted that the blood-groups of the tribes in question have been affected by miscegenation, an investigation of the blood-groups of the neighbouring populations would have set all doubts at rest. With such an investigation unaccomplished, and without eliminating the possibility of the Mundari-speakers' having been affected in their blood-group distribution by miscegenation with neighbouring populations, it was an error of methodology to seek to trace their affinities with the Mon-Khmer-speakers. Further, in tracing these resemblances, the ethnic affinities of the Mundari-speakers and the Mon-Khmer-speaking populations, whose blood-group distributions are claimed to be similar, were not taken into account.

3. An analysis of craniometric data from certain tribes was made. The samples were very small, but there were indications of a basic element represented among the Wedda-Kol and Fergusson (D'Entrecasteaux archipelago) series, to which the others were more or less similar in some respects and from which they diverged. The divergences in the East central groups may be due to miscegenation, but this can not be taken for granted. The significant divergences in the south occurred in three groups, two of which showed frizzly hair, probably due to mutation of the spiral hair factor. The divergences in the cranial characters are not due to mutation of the brachycephaly factor, and it is not known if they imply any genetical change in the population. The attempt to explain the diversities of the blood-group distribution of the Anterior Indian aboriginal tribes by assuming a number of races is unjustified.

Our thanks are due to Dr. Baini Prashad, Director, Z. S. I., and Dr. B. S. Guha, anthropologist to the Z. S. I., for allowing us to work in their laboratory and study their collection of skulls; we are also in the debt of Prof. Paul Rivet and Prof. L. Lapique of the University of Paris for allowing one of us (Chatterji) to study the collection of Kadar, Poulayan, Paniyan and Pollachi skulls collected by the latter during his research tour in South India in 1903-4; our thanks are further due to Principal M. N. Bose of the Carmichael Medical College, Calcutta, for allowing one of us (his pupil Mitra) to work in his laboratory on his collection of skulls.

HINDU ARCHITECTURE AND SCULPTURE

(Continued from p. 182).

By P. K. ACHARYA.

Pillars, as stated above, are the regulator of an architectural composition. They supply both stability and beauty to a structure. Thus in architectural buildings columnar treatment is considered the chief feature. This is proved both in theory and practice both in India and other countries. In the Mānasāra details of various types of pillars, their bases, pedestals, capitals, entablature and the ornaments are referred to in detail. In our ancient monuments pillars of such beauty and success have been found that interested historians have been at pains to prove that they must have been imported either from Persia or Greece and Rome.

The next remarkable feature of all architectural buildings, not only in India but all over the world, is variously known as the dome, tower, spire or Śikhara. It is like in human body the Head of a building. As human beings cannot be recognised without the face, similarly no headless building can be properly called an architectural structure. It is common knowledge that the dome is the most distinguishing feature of mosques, the spire of Churches, and the Śikhara of temples. But it is also to be noted that that feature is not limited to religious buildings alone. Dwelling houses, palaces, and public buildings are equally furnished with their head in the tiniest shape of a tower, dome, spire or śikhara. The tiniest of a Hindu temple, a Muslim mosque and a Christian church can boast of its remarkable head. Indeed the philosophy of life and the cultural and artistic attainments of a people are clearly indicated by the shape, design and workmanship of the top portions of their religious and civil buildings. The sharply ended spire and Śikhara point to the infiniteness of the god of worship whose image in some form is contained within the body proper.

The inside arrangements of artistic buildings are no less remarkable. For a tropical country like India roofs and terraces around the Śikhara, balconies and Verandahs together with their railings of various designs serve the double purpose of utility and beauty. Both in the Mānasāra and in the extant Hindu buildings Verandahs and balconies are very remarkable.

Similarly the steps and staircases add beauty, comfort and dignity to a house. The wonderful flights of steps which were constructed for climbing hills, *ghats* at rivers, seas and tanks, are a remarkable feature of Hindu Architecture. In the standard treatise as well as in epics and other branches of literature references to stately *sopāna* (step) are met with. The hand rails of the staircases terminating at both ends with various designs add charm to the whole building. The hand rails for staircases and for Verandahs and balconies as well as the parapets at the roof seem to have supplied the idea of the famous Buddhist railings which from the fifth century B. C. developed into a separate class of architectural objects. The railings at Sanchi, Bharahut, Bodhgaya and other places are well known.

The situation of doors and windows in the period of the *Vāstu-śāstra* imply the internal safety and security on the one hand and the scientific and aesthetic taste on the other. Various practices appear to have been in vogue as regards the position of the doors in dwelling houses or rooms and in the public temples, halls, palaces and mansions. Many authorities have denied doors in the middle of the front walls of bed rooms, etc., while such doors for kitchen and public buildings were specially emphasised.

The architectural ornaments are known as mouldings. In Hindu architecture these basic mouldings number as many as forty-seven.⁶ Thus we have a very large variety of ornaments in our buildings, although plain buildings were also known and practised. The result of Hindu ornamentation may be illustrated by a brief reference to the Piprahwa stūpa of the fifth century and the Konarak temple known as the black Pagoda on the coast of Orissa built in the ninth century A.D. and partly modified in the thirteenth century, and the Hoysālesvara temple at Halebid, Mysore state.

Within the limited space of this article there is hardly any room to make even a brief reference to the articles of furniture, which, in architecture, form an important part. Of course nothing except the stone beds of the Buddhist monks remain intact. But we have extensive reference, as early as the Vedas and the Buddhist scriptures, to sacrificial seats, raised seat for councillors, wooden seat, low, rectangular, polished carved, painted, wooden bench, priestly seats, royal and divine thrones of various kinds, mats, cushions, pillows, and coverlets of various kinds, nuptial bed and beds of various kinds, made of wood, heavy and strong, with four feet, embroidered and inlaid with straps of leather in the middle. In the Buddhist literature and *Vāstu-śāstras* further details

6. See the writer's *Indian Architecture*, pp. 127-128.

are available.⁷ The standard treatise, the *Mānasāra Vāstuśāstra*, has devoted twenty chapters out of a total of seventy to sculptures. There is in this a masterly classification of all images. In addition to the images of all gods and goddesses belonging to the Brahmins, Jains and Buddhists, there is a full description of statues of great personages and images of various animals and birds. The basis of the wonderful classification is a clever device known as the *Tālamāna*. There are twelve chief varieties of this, each of which may again be divided into the large, intermediate and small type. According to this device the total height of an image is determined by the length of its head. Thus in the eight *tāla* system which is applicable to the image of an average man the total height should be eight times its head. Fish etc., are measured in one *tāla*, birds in two *tālas*, Kinnaras (mythical beings with human body and horse's head) in three *tālas*, Bhūtas (goblins) in four *tālas*, Gaṇeśas (mythical being with human body and elephant's head), tigers etc. in six *tālas*, certain sages, Yakṣas etc. in seven *tālas*, certain sages and ordinary human beings in eight *tālas*, devotees, certain sages and Dānavas and goddesses etc. in nine *tālas*, Hindu gods, Buddha, Jīna, etc. in ten *tālas*, gods of certain category in eleven *tālas*, and Rākṣasas (fiends) in twelve *tālas*.

About the actual existence and illustration of these rules enunciated in the *Śilpaśāstras* there need be no doubt. The stories of the *Rāmāyaṇa* and the *Mahābhārata* are beautifully illustrated in stone-sculptures in the famous Kailāsa temple at Ellura. Many Paurāṇic stories are carved in stone at the Belur temples in Mysore. The Borobudur temple in Java contains in stone sculptures not only images of Buddha and of Buddhist mythology but also of various scenes of civil life of the locality.⁸

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7. For details see the writer's *Elements of Hindu Culture*, pp. 80-83. *Indian Architecture*, pp. 15-16, 89-93, 65-70. *Hindu Architecture in India and Abroad*, pp. 59-62, 73-75.
 8. See writer's *Hindu Architecture in India and Abroad*, p. 357.

HINDU IDEAL OF LIFE

(according to the Śrautasūtras)

By BATAKRISHNA GHOSH.

What a people *does* in relation to its gods must always be one clue, and perhaps the safest, to what it *thinks*.—Jane Harrison.

The Śrautasūtras present in a rationalised form the great sacrificial cult dating at least from the Indo-Iranian age but further developed and elaborated by the Bharadvājas, Viśvāmitras, Vasiṣṭhas and other great priestly families in India. The Śrauta sacrifices are the exclusive preserve of these Brahmin priestly classes, and even when intended for the benefit of Kings and rich patrons had to be performed by them alone. The common people had little or nothing to do with the Śrauta-sacrifices directly. Yet, everyone in the state doubtless believed in the profound and beneficial efficacy of these elaborate ritual ceremonies, which, therefore, were not without considerable influence on society.

The Gṛhya ritual, as we have seen, is predominantly magical in spirit,—the bizarre Gṛhya ceremonies being themselves regarded as the efficient and sufficient cause of the expected results even without the agency of the gods (the names of gods in the Gṛhya mantras are hardly more than magic words without any personal appeal). The Śrauta ritual, however, at least of the Ṛgvedic age when the poetry of the mantras was still a vital and moving factor and had not degenerated into meaningless magic formulas, is much different. The Ṛgvedic Śrauta sacrifices may be described as ritualised prayers,—their mantras are actually the prayers of a primitive and virile people addressed to benevolent gods, and it is these gods (and not the ritual) who are regarded as the real agents in conferring gifts and blessings on the sacrificer. But then, already in the Ṛgveda, there are passages which clearly suggest that the gods themselves were thought of as unable to resist the compelling persuasion of the Śrauta-sacrifices!¹ So, if the Gṛhya ritual is on the whole penetrated by motives of direct magic,

1. See Oldenberg, *Die Religion des Veda*², p. 319. Formulas used in Roman religion too were regarded as possessing similar power of compelling the gods (see Wissowa, *Religion u. Kultus der Römer*, p. 333).

the Śrauta ritual, it must be admitted, is the embodiment of indirect magic at the best. Whether the Śrauta-ritual in its oldest form—in the Indo-Iranian or still earlier times—was absolutely free from the magical element will never be fully ascertained.

Everything in the Śrauta sacrifices is performed by the Brahmin priests, the Yajamāna himself having to do nothing but bestow the Dakṣiṇā, observe the Sāmskāras such as sleeping on the ground, etc., and in special cases recite some mantras under the direction of the priests. The number of priests varies. Only the Adhvaryu is required for the Agnihotra. For the Agnyādheya as at new- and full-moon sacrifice are required three more priests, viz. Āgnīdhra, Hotā and Brahman. A fifth priest Pratiprasthātā is necessary for the Cāturmāsya-sacrifice, and at the Paśubandha we have the sixth priest Maitrāvaruṇa apart from the Śamitā. But no less than sixteen priests are necessary for the highly complicated Soma-sacrifice. The Hotā there appears with three assistants, namely the Maitrāvaruṇa, the Acchāvāka and the Grāvastut ; the Adhvaryu has as his assistants the Pratiprasthātā, the Neṣṭā and the Unnetā ; the Udgātā has under him the Prastotā, the Pratihartā and the Subrahmaṇya ; the assistants of the Brahman are also three in number, viz. the Brāhmaṇācchaṁsin, the Potā and the Āgnīdhra. According to the Kauṣītakins a seventeenth priest Sadasya is necessary for the Soma-sacrifices ; his function is to supervise the whole ceremony. From the view-point of actual practice, however, the grouping of the priests is somewhat different, for the three assistants of the Brahman and one of the assistants of the Adhvaryu, namely the Neṣṭā, are in practice helpers of the Hotā.

Nearly all the manual work connected with the Śrauta-sacrifices is performed by the Adhvaryu-priests, the others have only to recite, chant or mutter respectively the Ṛk-verses, the Sāmans and the Yajus-mantras. The Hotā with his assistants is in charge of the recitation of the Ṛk-verses, the Yajus-mantras are muttered chiefly by the Adhvaryu-priests, and the Sāmans are chanted by the Udgātā and his assistants. Without special qualities, both inherited and acquired, no Brahmin can become a professional priest, nor can every member of the three upper castes become a Yajamāna at will. Both parties have to prove their *bona fides* before a sacrificial session is undertaken. This is necessary, for the Yajamāna may cheat the priest in respect of Dakṣiṇā, and the priests in their turn may do incalculable harm to the Yajamāna by allowing intentional lapses in the course of ceremonies.

A certain number of sacrifices are regarded as basic forms (*prakṛtis*) of which the rest are supposed to be mere variations (*vikṛtis*). Thus the new- and full-moon sacrifices are the Prakṛti of all other Iṣtis ; the Agniṣṭoma is the Prakṛti of the Dvādaśāha and the Ekāhas, and

the Dvādaśāha in its turn is that of the Ahīnas and Sattras, etc. Each sacrifice is divided into its principal (*pradhāna*) and auxiliary (*aṅga*) parts. The Pradhāna constitutes the distinguishing feature of a sacrifice and therefore has to vary from one sacrifice to another, but the Aṅgas, of minor importance, are repeated in practically the same form in many sacrifices. Thus the Pradhāna of the full-moon sacrifice consists of the Puroḍāśa aṣṭākāpāla for Agni, the Puroḍāśa ekādaśākāpāla for Agni-Soma, and the Upāmsuyāga for Viṣṇu or Agni-Soma, etc.; all else, such as the Prayājas and Anuyājas, are mere Aṅgas which are of no importance in themselves but serve as complement to the Pradhāna. The Aṅgas of a sacrifice are known collectively as the *tantra*: a single Tantra may serve several Pradhānas if their time and place of performance are the same. The Tantra reappears in practically the same form in Vikṛtis, only the details varying sometimes.—The sacrificial offerings are of two kinds, viz. *yajātis* and *juhōtis* respectively. Like all Homas not specifically excepted, they too are offered into the Āhavanīya-fire. The *yajātis* are offered by the Adhvaryu in standing posture after the Puroṇuvākya and the Yājyā, the latter ending with the Vāṣaṭ-call; the *juhōtis* on the other hand are sacrificed by the Adhvaryu sitting with right knee bent, and the offering is accompanied only by Svāhā-call (no Anuvākya or Yājyā); hence the *juhōtis* are also known as *upaviṣṭāhomas*. The Puroṇuvākya of the Yajati-homa is an invocation to the deity, its Yājyā-verse (preceded by the formula *ye yajāmahe*) referring to the offering. The order to recite the Puroṇuvākya is given by the Adhvaryu or the Maitrāvaruṇa. In the latter case the Adhvaryu at first addresses to the Maitrāvaruṇa the Sampraiṣa “*agnaye preṣaya*” “*somāya preṣaya*”, whereupon the Maitrāvaruṇa addresses to the Hotā the Praiṣa “*agnaye ’nubrūhi*”. Before the Yājyā the Adhvaryu says to the Āgnīdhra “*oṣm śrāvāya*”, and the latter replies “*astu śrauṣaṭ*”. Then the Adhvaryu commands the Hotā to begin recitation by saying to him “*Agnim (Somaṃ etc.) yaja*”, and the latter thereupon begins the Yājyā with the Āguri-formula *ye yajāmahe* mentioned above. The seventeen mantra-syllables, namely “*āśrāvaya*” “*astu-śrauṣaṭ*” “*yaja*” “*ye yajāmahe*” and “*vāṣaṭ*”, are regarded as a constant feature of Śrauta-sacrifices (see Nilakaṇṭha on MBh. XII. 47. 43).

In the case of Soma-sacrifices the situation is infinitely more complex, for there we have over and above the usual paraphernalia the recitations and chants of the Hotā and the Udgātā and their assistants. The three characteristics of a Soma-sacrifice are the *graha* (cup), the *śastra* (hymn) and the *stotra* (song of praise) as already mentioned in the Śatapatha Brāhmaṇa (VIII. 1. 3. 4). In the Agnistoma there are altogether twelve Śastras of Hotṛ-priests and twelve corresponding Stotras of the Sāma-singers. Of the five Śastras of the morning press-

ing, two (*ājya* and *prauḡa*) are recited by the Hotā himself and the rest by his assistants (*hotrakas*); corresponding to these there are from the side of the Udgātṛ-priests the *bahiṣpavamāna-stotra* and four Ājya-stotras known as *dhuryas*. At the midday pressing there are two Śastras of the Hotā (*marutvatīya* and *niṣkevalya*) and three of the Hotrakas; corresponding to these five Śastras we have the *mādhyandinapavamāna-stotra* and four others known as *prṣṭha-stotras*. At the evening pressing there are only two Śastras (*vaiśvadeva* and *āgnimāruta*), both recited by the Hotā himself; corresponding to them the two Stotras *ārbhava-pavamāna* and *agnīṣṭomasāman*, the latter also known as *yajñāyajñīya*.

The Śastras are recitations, but the Stotras are songs chanted on the melodies (*sāmans*) collected in the *Sāma-saṃhitā* (the *text* of the SV. is altogether of secondary importance, giving, as it does, only the words on which these melodies have to be chanted). Now, the same verse can be chanted according to one melody only, or according to various melodies; in the former case the SV-verse concerned is called *ekasāmin*, and in the latter case, *bahusāmin*. On the other hand, the same melody may be chanted on different verses. The verses of the SV-text have therefore often to be modified and touched up in various ways in actual chanting. This is done very often by Vikāra, as when “*agne*” is chanted as “*ognāyi*”; when “*vītaye*” is changed into “*voyi toyāzyi*” in chanting it is Viśleṣaṇa; the word “*ye*” may be distended into “*yāzzyi*” by the process of Vikarṣaṇa; if a word of the original verse is uttered twice in chanting it is Abhyāsa; ungrammatical Virāma too may be forced in this way,—thus “*grnāno havyadātaye*” may have to be chanted as “*grnānoha vyadātaye*”; most frequently however the Rk-verse is accommodated to the Sāma-melody through the addition of meaningless Stobhas such as *auhovā*, *hāū* etc. Detailed rules about these modifications of texts in chanting are to be found in the *Puṣpa-sūtra*.

Every Sāman is artificially divided into several parts. The first part is the Prastāva which is introduced with *hum* and chanted by the Prastotā; the second part is the Udgītha introduced with *om* and chanted by the Udgātā; then comes the Pratihāra introduced with *hum* and chanted by the Pratihartā; and then the Nidhana or finale chanted by all together. The Pratihāra moreover is divided into the Pratihāra proper and the Upadrava chanted by the Udgātā (for further details see *Pañcavidha Sūtra*).—If a single Sāman-melody is chanted on several verses (usually a Trīca or a Pragātha) the whole is called a Stotra, and a Stotra in its turn, through various combinations and repetitions of its verse-chants, results in long Stomas, of which, again, different varieties (*viṣṭutis*) are possible. These Viṣṭutis, consisting of several Paryāyas, clearly show that the Sāman-chants were regarded

purely as magical charms. The Pañcadaśa-stoma, for instance, is based only on three verses artificially constructed out of a Pragātha, i.e. a pair of verses of which the first is either a Bṛhatī or a Kakubh and the second a Satobṛhatī (Rkprātiśākhya, XVIII. 1); the component Pādas of this artificial verse-triad arranged in various weird ways and embellished with appropriate Stobhas etc., are then made to yield the number of verses required in the Stoma.²—The two Sāmans which are certainly the most important in Soma-sacrifices other than the Agni-ṣtoma are the Bṛhat and the Rathantara chanted on alternate days of the Abhiplava-ṣaḍaha, while at the Pṛṣṭhya-ṣaḍaha a different Sāman is chanted on each of its six days.

The ritual of chanting the Stotras is no less elaborate than that of the recitation of the Yājyā by the Hotā. For every Stotra, the Udgātṛ-priests must formally ask the permission of the Brahman and the Maitrāvaruṇa with the words “*brahman stoṣyāmaḥ praśāstaḥ*” and the latter grant it with a formula ending with *om stuta*. The Brahman should preferably be a Vasiṣṭha. The chant of the Udgātṛ-priests, already described above, is followed by the Śastra of the Hotā or the Hotrakas as the case may be,—for which the command is given to them by the Stotrakārin with the word “*eṣā*” after the last Pratihāra. The Hotā addresses to the Adhvaryu the Āhava “*śomsāvoḥ*” to which the latter replies with the Pratigara “*othā modaiva*” or “*śomsā modaiva*”. Then follows a *tūṣṇīmjaḥ* and then the *puroruc*, both by the Hotā. And so on.³—In the following we shall briefly discuss at first the simpler Haviryajñas and then the more elaborate Somasaṁsthāḥ and other sacrifices.⁴

In contradistinction from the Gṛhya-ritual for which the household fire (*gārhapatya*) alone is sufficient the Śrauta-ritual requires two more, namely the Āhavanīya and the Dakṣiṇāgni, though the Gārhapatya-fire, as the only one which (in theory at least) is never allowed to go down and also as the representative of the sacrificer, is easily the most important of the three also in Śrauta-sacrifices. The other two fires are kindled with splinters from this Gārhapatya-fire. When setting out on a journey the householder at first takes leave of the Gārhapatya and then of the Āhavanīya, and when returning home he at first

2. See Weber, *Indische Studien*, VIII, p. 25; Hillebrandt, *Ritualliteratur*, p. 101; Caland, *Introd. to Translation of Pañcaviṁśa Brāhmaṇa*; Keith, *Religion and Philosophy*, p. 314.

3. For further details see Hillebrandt, *Ritualliteratur*, pp. 102-3; Keith, *Religion and Philosophy*, *loc. cit.*

4. The following is based chiefly on Hillenbrandt's *Ritualliteratur* and the *Āpastamba Śrautāsūtra*.

greet the Āhavanīya, and then the Gārhapatya : this touchingly expresses the intimate relation between the Gārhapatya fire and the householder's hearth and home. The sacrificial food is cooked on the Gārhapatya-fire, but not sacrificed into it,—it is sacrificed into the Āhavanīya. The Āhavanīya-fire, situated to the east, is the gate to heaven through which the offerings to the gods have to pass, just as the Dakṣiṇāgni (the significant designation indicates its location) into which the offerings to the Manes are sacrificed is the gate to the underworld.⁵

The elaborate ritual⁶ of setting up the sacrificial fires extending over two days is technically known as Agnyādheya. A Brāhmaṇa should perform this ceremony in spring, a Kṣatriya in summer, a Rāthakāra in the rainy season, a Vaiśya in autumn ; but in winter it may be performed by all. At first two huts are set up for the Gārhapatya and the Āhavanīya, the fire-altars in them being round and square respectively. The altar of the Dakṣiṇāgni, situated to the south of the Gārhapatya, is shaped like a half moon. New fire for the altars is produced by attrition and is placed on the Gārhapatya. This laying of the Gārhapatya-fire is accompanied by mantras varying according to the ancestral Ṛṣi-name of the sacrificer. Thus if the sacrificer is a Bhārgava the Gārhapatya-fire is addressed with the mantra "*bhṛgūṇāṃ tvā devānāṃ vṛatāpate vṛatenā 'dadhāmi*"; in the case of an Āṅgīrasa the mantra would be "*āṅgīrasāṃ tvā devānāṃ*" etc. (Āp. 5. 11. 7).⁷ The Āhavanīya-fire is then kindled with a faggot from the Gārhapatya. When the faggot is carried from the Gārhapatya to the Āhavanīya a horse is to trot in front of it : the horse here clearly represents the fire-god.⁸ According to Kātyāyana the southern fire too should be kindled in the same way, but Āpastamba differing from him

5. See Oldenberg, *Op. cit.*, p. 350.

6. Described in detail by Hillebrandt, § 59.

7. This unusual variation of the mantra strongly suggests that the fire-cult was originally developed by each of the great priestly families separately from the habitual adoration of the hearth-fire. Expressions such as *agnir bhara-tasya* (RV. 7. 8. 4) should be interpreted in the light of this passage of the Āp. Śr. S. rather than otherwise (as for instance Oldenberg, *Op. cit.*, p. 132 who emphasises only the point that Agni was intimately connected with the household).

8. Sūrya's horse is conventionally called *bradhna* in the RV. Originally the word must have signified some colour (cf. RV. 10. 20. 9), and a reddish colour at that (cf. RV. 1. 6. 1). This conventionalisation of the designation of Sūrya's horse suggests that already in the R̥gvedic age Sūrya came to be specially associa-

significantly lays down that the fire for the Dakṣiṇāgni should be fetched from somewhere else or produced separately by attrition. The Dakṣiṇāgni is doubtless the Agni Kavyavāhana of the older literature, just as Āhavanīya is the name of the older Agni Havyavāhana.⁹ A pious Śrotriya or a powerful prince was expected to maintain these three fires; but there were people, held in the highest esteem, who maintained two more fires, namely the Sabhya and the Āvasathya.¹⁰ The place of the Sabhya-fire is in the Sabhā, and it is meant exclusively for the Kṣatriya; a ceremonial game of dice is played on the occasion of the installation of this fire. The purpose of the Āvasathya-fire, mentioned along with the Sabhya (Āp. 5. 17. 1), is not clear. Hillebrandt suggests that it is the fire of the Āvasatha "retreat" in which guests from outside were entertained.¹¹—The fires thus ceremonially laid by the Āhitāgni have to be maintained by him through life, and it is expected that his life would henceforth be free from all blemish. But if the fires installed at so much expense fail to produce the expected results or prevent mishaps the Āhitāgni is free to give them up and install new fires within a year (Punarādheya). It is a peculiar feature of this Punarādheya-ceremony that various case-forms of the word *agni* (e. g. *agnim*, *agninā* etc.) are used in the mantras employed in it (Āp. 5. 28. 6). And it is suggestive of the whole purpose of the ceremony that some of the implements used have to be repaired ones, not new.

The daily duty of offering sacrifices into the domestic fire, morning and evening, is no less binding on the Śrotriya (= Āhitāgni = Vaitānika) with at least three fires than on the ordinary Snātaka-householder with only one, but of course the duties of the Āhitāgni Śrotriya are in this regard much more onerous as clearly suggested by the description of the elaborate ceremony of Agnihotra in the Śrauta-sūtras. It is quite apparent from the significant rules about the kindling of fires for the Agnihotra that not only the continuous maintaining of three fires at least was largely a matter of theory but also that even the Gārhapatya fire was not unoften allowed to languish (see Āp. 6. 1 ff.). The southern fire, at all events, was not maintained

ted with this animal. But not Sūrya alone, for Indra's horse too has a similar conventionalised designation in the RV., namely *hari*. It is possible at any rate that the ritual fire was contemplated as the sun.

9. Cf. Śat. Br. 2. 6. 1. 30 : *havyavāhano vai devānām kavyavāhanaḥ pitṛ-ñām*. Similarly Manu I. 95 : *havyāni tridivaukaṣaḥ kavyāni cai 'va pitarāḥ*.

10. On these two fires see particularly Hillebrandt, *Vedische Mythologie*, vol. I, pp. 128-30.

11. *Vedische Mythologie*, vol. I, p. 129 f.-n. 7.

continually. The chief offering at the Agnihotra is milk which should be milched preferably by an Ārya and not a Śūdra, and that from front or back-teats of the cow according to the special desires of the sacrificer. The difference between the morning- and the evening-Agnihotra is slight.—The ceremony of Prātaravaneka is mentioned as a non-obligatory adjunct to morning-Agnihotra (Āp. 6.20) while Agny-upasthāna is the similar non-obligatory adjunct to the evening-Agnihotra. Very probably this custom of performing Agnihotra twice daily had been developed already in the age of the Ṛgveda.¹²

Of periodical Śrauta sacrifices we have firstly to mention the Śrotīya New- and Full-moon (Darśapūrṇamāsa) sacrifice which is much more elaborate than that of the Gṛhya ritual and serves as the Prakṛti of all Iṣtis. The central feature of the New-moon sacrifice is the offering of a Puroḍāśa to Indra-Agni, that of the Full-moon being a similar Puroḍāśa to Agni-Soma. "Two days were required at new moon, but one might suffice at the fullmoon."¹³ The preliminary part of the ceremony is concerned chiefly with the preparation of the Vaitānika fires, taking of the vow by the sacrificer, and various other details,—one of them being that the wife of the sacrificer should look at the Ājyasthālī set before her, but not before the Āgnīdhra has twisted round her a three-fold cord. The actual sacrifice begins with the recitation by the Hotā of the fifteen "kindling" (*sāmidhenī*) verses.¹⁴ The most interesting of the immediately following ceremonies is the Pravara, or enumeration of the Ṛṣi-ancestors of the sacrificer (see Āp. 2. 16. 6 ff.), who, if a prince, has to invoke the names of those of his Purohita in this connection (Āp. 2. 16. 10). There is also an invitation of the gods through Agni in the order in which they figure in the sacrifice. These two important ceremonies of the cult have to be performed in the interval between the first two Āghāras (i. e. the sprinkling of the Āhavanīya with butter to prevent its languishing). After the second Āghāra takes place the ceremonial election of the Hotā by the Adhvaryu, and the Ṛṣi-ancestors of the sacrificer are again mentioned in this connection. An important feature of the sacrifice is the eating of the sacrificial offering by the priests, the special shares of the Brahman and the Āgnīdhra being the Prāśitra and the Śaḍavatta respectively. Of the various supplementary offerings let us mention the four Patniṣamṣājās, at the third which, addressed to the wives of the gods, the

12. So Oldenberg, *Op. cit.*, p. 438 f.-n. 1.

13. Keith, *Religion and Philosophy*, p. 319.

14. Actually there are only eleven verses; the number fifteen is attained by repeating thrice the first verse and the last (see Caland *ad* Āp. 2. 12. 2).

wife of the sacrificer has to touch the Adhivaryu.¹⁵—An Āhitāgni should continue performing New- and Full-moon sacrifices all his life. If both sacrifices are performed on each new- and full-moon day the full course may be completed in fifteen years. The same result may be attained even in one year by performing both in the Dākṣāyaṇa form every day.

The next important recurring Śrauta-sacrifice is the Cāturmāsya, which is a generic name for the three seasonal festivals, viz. Vaiśvadeva in spring, Varuṇapraghāsa in the rainy season, and Sākamedhas in autumn. Common to all the Cāturmāsya are the five initial offerings to Agni, Soma, Savitr, Sarasvatī and Pūṣan. At the Vaiśvadeva, with which the course of Cāturmāsya should begin, these initial offerings are followed by a Puroḍāśa for the Maruts, a Payasyā for the Viśve Devāḥ, and a Puroḍāśa for Heaven and Earth. The chief characteristic features of the Varuṇapraghāsa are the offering of a ram and an ewe of barley, the former for Varuṇa and the latter for the Maruts, sex-marks being prominently indicated on the two figures, and the confession by the wife of the sacrificer as to the number of her lovers, either by word of mouth or by raising as many Kuśa-blades as she has had paramours.¹⁶ These peculiar ceremonies clearly indicate that Varuṇapraghāsa was a ritualised folk-festival. The most important features of the Sākamedhas are the Pitryajña^{16a} performed at the Dakṣiṇ-āgni and the Traiyambakahoma offered to Rudra who is asked to partake of it along with his sister Ambikā. The Sākamedhas is followed immediately or after an interval by an offering to Śuñāsīrau which is clearly an agricultural rite.—Corresponding to the Gṛhya first-fruit festival we have annual Śrauta Āgrayaṇa ceremonies prescribed for Āhitāgnis to be performed on new- or full-moon day according to the rites of the new-moon sacrifice (Āp. 6. 29. 2 ff.) for each of the new crops like rice, barley etc. in appropriate seasons.

These are the daily or periodically recurring *nitya* ceremonies

15. The Śrāddha-ceremony of Piṇḍapitryajña has to be performed by the Āhitāgni in the afternoon of every new-moon day.

16. This is supposedly the only case in Vedic ritual where sin is regarded as a moral defilement and not a merely physical one removable by appropriate magical ceremonies (so Oldenberg, *Op. cit.*, p. 324). Yet the penitentiary character of many of the Prāyaścittas is so transparent that it would be certainly going too far to deny them any urge from moral compunction.

16a. in which Caland, *Über Totenverehrung bei einigen der idg. Völker*, pp. 78 f., believed to have discovered traces of a very ancient sacrifice to the Manes dating from the Indo-European era.

which an Āhitāgni, under normal circumstances, is expected to perform all his life. But there are, besides, a host of *naimittikas* and *kāmyas* which the Āhitāgni may perform for the fulfilment of special desires or in celebration thereof. These are technically known as *Iṣṭis*. The Āgrayaṇa ceremonies mentioned above are typical *Iṣṭis* in celebration of the fulfilment of desires; but there are other *Iṣṭis* aiming at the restoration of amicable relation, reconciliation between relatives, birth of a son, acquisition of wealth, etc. The Kāririṣṭi prescribed for those who wish for rain shows many features of pure magic (see Hillebrandt, § 66).

Śrauta animal-sacrifices form a category apart. From the description of these sacrifices it is quite clear that the purpose of the naïve and bizarre ceremonies connected with them was to introduce into the sacrificial animal active magical potency for transference to the participators at the sacrifice through the simple process of consuming its flesh or otherwise (Oldenberg, p. 331). Similarly motivated animal-sacrifices are known among many primitive peoples.¹⁷ What is of particular interest with regard to Śrauta animal sacrifices is that the peculiar form in which they appear in the texts seems to have been developed already in the Indo-Iranian age, for the ancient Iranian animal sacrifice as described by Herodotus shows striking points of similarity.¹⁸—The Śrauta-sūtras distinguish between two kinds of animal-sacrifices, viz. the Nirūḍhapaśubandha, which is an independent animal-sacrifice, and the Agniṣomiya connected with Soma-sacrifice. An Āhitāgni cannot eat flesh unless he has performed the Nirūḍhapaśubandha, and he has to continue performing it all his life, once or twice a year.

On the whole the Nirūḍha animal-sacrifice follows the model of the new-moon sacrifice. But no less than six priests are necessary for it, namely the Hotā, Adhvaryu, Āgnīdhra and Brahman as at every *Iṣṭi*, and also the Maitrāvaruṇa and the Pratiprasthātā (see Caland *ad* Āp. 7. 14. 4). The Maitrāvaruṇa receives a staff on stepping into the place of sacrifice which he retains till the end: he must not touch himself or anybody else with it before uttering the *Praśas* of which the purpose is to urge the Hotā to recite the *Yājyās*. A goat

17. Cf. the ancient Cretan custom of eating raw the flesh of the Dionysian bull in whom the god was supposed to have been incarnated (Harrison, *Prolegomena*,² pp. 482-5; Nilsson, *A History of Greek Religion*, p. 95). What may be called an eye-witness' account of this revolting Greek custom of omophagia will be found in Merejkowski's interesting novel *Naissance des Dieux*.

18. Oldenberg, *Op. cit.*, p. 342.

without any physical blemish is sacrificed for Indra-Agni or Sūrya or Prajāpati. In animal-sacrifices other than the Nirūdhapaśubandha various other animals, sometimes in very large numbers, are immolated, particularly oxen and sheep, the colour and quality of the victims varying according to the god for whom they are sacrificed. The preparation of the post (*yūpa*) to which the sacrificial animal is bound is elaborately described, the accompanying mantras assuring the tree which is cut down for the purpose that nobody bears it any ill-will, the size and shape of the post, as well as the particular tree that should be cut down, varying according to the special desires of the sacrificer (Āp. 6. 2. 11 ff.). The Yūpa is placed in a hole which is half within and half without the Vēdi, and a cord is wound round it at a height varying as usual according to object in view. The Pāśukī Vēdi at which the animal is to be sacrificed is set up east of the fire, and in the eastern third of it is constructed the Uttaravēdi, and upon the latter the Uttaranābhi : at animal-sacrifices the fire of the Uttara-vēdi takes the place of the Āhavanīya, and the latter that of the Gārhapatya. As special utensils necessary for animal sacrifices we have the Vapāśrapanī on which the omentum of the victim is grilled and the Hṛdayaśūla or the spit on which the heart of the sacrificed animal is roasted. When everything is ready, the victim is bathed in perfumed water and, after Agnimanthana, is bound to the post with a cord. Then follow, as at new and full-moon sacrifice, the kindling verses, election of Hotā, invitation of the gods, Āghāras, and the election of priests.

The sacrifice proper begins after this with eleven Prayājas, the Yājyās corresponding to them being supplied by the Āpri-hymns varying in different priestly families.¹⁹ After the tenth Prayāja the Svaru and one edge of the double-edged knife are anointed with butter and placed on the head of the sacrificial animal with the mantra "*ghṛtenā 'ktau paśum trāyethām*" (Āp. 7. 14. 11) ! Then the Adhvaryu hands the weapon to the Śamitā (who has to separate the limbs of the sacrificed animal with it) with the words "may this edge be sharp for you" (Āp. 7. 14. 14). What the Śamitā actually does to kill the victim is to strangle it with a cord (Āp. 7. 16. 5) while everybody else looks away, the Yajamāna reciting the significant mantras "you are not actually dying, nor are you being injured, you are going to the gods by

19. According to Bergaigne quoted by Hillebrandt, *Ritualliteratur*, p. 16, these Āpri-hymns used at animal-sacrifices are the best proof of the previous existence of different sacrificial cults in different priestly families in the earliest period, though a persistent effort to rationalise them into a homogeneous system set in already before the oldest Brāhmaṇas.

convenient routes ; where the virtuous and not the sinners go,—there the god Savitā may install you” (Āp. 7. 16. 7). Just before the animal is strangled it is touched (with the roasting spit) by the Pratiprasthātā, the latter by the Adhvaryu, and the Adhvaryu by the Yajamāna,—all standing in a row (*pīṇīkavat*), the purpose of the ceremony being clearly to communicate to the participators the magic substance concentrated in the victim.²⁰ The omentum of the victim is then taken out and roasted on a spit over the Śāmitra (i.e., the slaughterer’s fire) and finally placed on the Uttaravedi. Now comes the eleventh Prayāja, after which the whole omentum, with butter poured over it, is sacrificed along with pieces of gold, while the Śāmitā holds the opening, through which the omentum has been taken out of the victim’s stomach, closed with his fist (Āp. 7. 19. 3). After a number of minor ceremonies immediately following, the various limbs and parts of the carcass (see Āp. 7. 22. 6) considered fit to be offered to the gods (*daivatāni avadānāni*, which may be compared to the *exta* of the victim sacrificed in Roman ritual; see Wissowa, *Op. cit.*, p. 352) are sacrificed in the proper order, the unclean parts being thrown into a pit west of the Śāmitra-fire outside the altar-ground as the share of the Rakṣases. Of the various ceremonies following this central feature of the sacrifice let us mention the eating of the Idā and the meat by the priests and the sacrificer, the eleven Anuyājas, the after-offering to the sacrificial grass (*prastara*), the offering of the tail of the victim to the wives of the gods, the prayer imploring Varuṇa to forgive sin, etc.—The ritual literature knows also Naimittika and Kāmya animal-sacrifices performed on special occasions or for the attainment of special desires.²¹

Now we come to the Soma-sacrifices, which, in contrast to other sacrifices, are offered, not to particular gods, but to the whole body of divinities, as also in the Avesta (Oldenberg, p. 452). Historically considered, they should perhaps be regarded as the result of syncretism between the fire-cult, probably of Indo-European antiquity,²² and the Soma-cult at least of Indo-Iranian age.²³ That the intoxicating Soma-juice should be the central element of these amazingly elaborate ritual ceremonies is natural enough. To the primitive Indo-Iranians its wondrous effect on body and mind could but appear to be the result of direct divine influence, and so to come into communion with the gods, what could appear to them more obvious than to partake of the

20. Cf. Oldenberg, *Op. cit.*, pp. 497 f.

21. See Hillebrandt, *Op. cit.*, § 67 (end).

22. Keith, *Religion and Philosophy*, Appendix E.

23. Caland-Henry, *L’Agniṣṭoma*, vol. II, p. 469.

beverage which visibly produced that effect? The same motive explains also the drinking of wine at the Dionysian orgies of ancient Greece.

The basic form of all Soma-sacrifices is the Agniṣṭoma,²⁴ a sacrifice lasting one day only (*ekāha*) but requiring several days of preparation, and characterised by twelve Stotras and as many Śaṣtras as mentioned above. The Ukthya is a modified form of the Agniṣṭoma, requiring at the evening-pressing not two Stotras and two Śaṣtras as at the Agniṣṭoma, but five of each,—there being thus, fifteen Stotras and fifteen Śaṣtras at the Ukthya; the three additional Śaṣtras are called Ukthāni,—whence the designation of the whole ceremony. The Ṣoḍaśin, in its turn, is a modified form of the Ukthya, its distinctive feature consisting of a sixteenth Stotra and a sixteenth Śaṣtra. The other Ekāhas are the Atirātra (nocturnal vigil, twenty-nine Stotras and as many Śaṣtras), the Aptoryāma (thirty-three Stotras and as many Śaṣtras), the Atyagniṣṭoma (perhaps a special form of Ṣoḍaśin), and the Vājapeya which should have been in origin a popular festival in celebration of victory.²⁵ —“Ahīna” is the technical term signifying Soma-sacrifices lasting from two to twelve days, the longest Ahīna being thus the Dvādaśāha. Between the Ekāha and the Ahīna there is no difference excepting in duration, the latter being in fact a succession of Ekāhas variously modified and combined. The Āśvamedha is an Ahīna of three days.—The Dvādaśāha holds an intermediate position between Ahīnas and Sattras, i. e. sacrificial sessions of at least twelve days, but usually extending over one year: the Dvādaśāha may thus be performed both as an Ahīna and as a Sattra. A Mahāsattra is an extended Sattra of twelve years. The Ahīnas are performed by officiating priests in the interest of laic Yajamānas, but at the Sattras there is no room for Yajamānas as such, all the participating priests themselves being at the same time Yajamānas also, though one of them formally assumes the rôle played by the Yajamāna at the Ekāhas and Ahīnas. There is therefore no prospect of Dakṣiṇā at a Sattra.

The chief element of a Sattra is the Ṣaḍaha, a period of six days, of which tho varieties are known in the cult: the Prṣṭhya-ṣaḍaha, on each of the six days of which a different Sāman is chanted, and the Abhiplava-ṣaḍaha, at which the Sāmans Brhat and Rathantara are chanted on alternate days. A chain of Prṣṭhyas and Abhiplavas variously arranged, along with other elements, would cons-

24. Described in all its details by Caland-Henry, *Op. cit.* Oldenberg too, in his inimitable language, has given a brief but beautiful description of it (*Op. cit.*, pp. 457-9).

25. See Caland-Henry, *Op. cit.*, Préface, p. VIII.

titute a year-long Sattrā like the Gavāmayana, of which the second half-year is the exact replica of the first, but in the opposite order, so that the beginning of the second half is identical with the end of the first and the beginning of the first half is identical with the end of the second. Dividing these two symmetrical halves stands the Viṣuvat performed on the solstitial day. The whole session of Gavāmayana is concluded with the Mahāvratā which shows many highly interesting features of folk-festivals such as the dance of women in a ring round the fire with water-pitchers.²⁶

Even Agniṣṭoma, the simplest of Soma-sacrifices, is so complex that it requires no less than two hundred and sixty separate ritual acts according to the enumeration of Caland-Henry. And each of these two hundred and sixty is by no means a simple ritual act,—some of them are in fact elaborate rituals by themselves! The first of the ritual acts preparatory to Agniṣṭoma is of course Dīkṣā, of which the purpose is to chasten the mind and the body of the prospective sacrificer. The period of this chastening may vary from one day to one year. But the preparatory ceremonies with specific relation to the Agniṣṭoma are performed during the three Upasād-days immediately following the period of Dīkṣā, so that there would be altogether four preparatory days if the Dīkṣā is of one day only. The first Upasād-day is devoted chiefly to the purchase of King Soma. The mode of this purchase is very peculiar,—clearly suggesting a semi-ritualised form of an ancient Soma-myth. The vendor of Soma, a Kautsa or a Śūdra, should be actually beaten, and his goods taken away from him by force: later however he is given gold or a cow as price for his merchandise.²⁷ After the purchase, King Soma proceeds towards the sacrificial ground in his chariot while “the Subrahmaṇya utters the formula, whence he derives his name,”²⁸ inviting Indra to pratake of the Soma. The metaphor of royalty is maintained throughout the ritual. After the royal procession comes the royal reception and then the formal installation of the King on the throne. He is also entertained with an elaborate guest-offering (*ātithyeṣṭi*). The ceremonies of the first Upasād-day, including two Pravargvas (milk-offerings) in the morning and afternoon²⁹ and two corresponding Upasads,³⁰ are concluded with a light meal (*vrātana*) in the evening. The special feature of the second

26. See Caland-Henry, *Op. cit.*, Préface; Keith, *Op. cit.*, pp. 349-52.

27. For details of this ritual mimicry see Caland-Henry, § 34.

28. Keith, *Op. cit.*, p. 327.

29. See Keith, *Op. cit.*, pp. 332-3.

30. Caland-Henry, §§ 52 and 57.

Upasad-day is the preparation of the Mahāvedi, the Uttaravedi, the Cātvala and the Uttaranābhi. On the third Upasad-day, the second Pravargya and Upasad are performed at noon and not in the afternoon as on the previous two days, the evening being devoted chiefly to the offering of a goat to Agni and Soma (*agnīṣomiya paśu*).³¹ The principal animal-sacrifice connected with the Agniṣtoma (*savanīya paśu*) takes place on the great Sutya-day following immediately after the third Upasad-day, the Vapā being sacrificed at the morning-pressing, the Paśu-puroḍāśa at the midday-pressing, and the Aṅgāni at the evening-pressing.³² Of the bewildering number of complex ceremonies performed on the Sutya-day round the three pressings, no adequate idea can be given within the space at our disposal. The Dakṣiṇās, consisting sometimes of "all the sacrificer's goods save his eldest son,"³³ have to be paid at the second pressing after the Nārāsaṃsa-cups have been deposited. The whole ritual is concluded, as usual, with an elaborate sacrificial ablution (*avabhṛtha*) after the evening-pressing.

The Agniṣtoma is the model of numerous Ekāhas,³⁴ such as the Viśvajit, after performing which one has to pass twelve nights in different places,—three of these twelve among Niśādas. The Sādyahkra, of which six varieties are mentioned, is essentially a simplified Agniṣtoma, all the ceremonies connected with it, from Dikṣā to Avabhṛtha, being performed in one day. Much more interesting are the four Vratyastomas of which the object was formally to accept within the Aryan fold the non-Aryans or those Aryans who had forfeited their privileges through neglect of social duties (*patitasāvitrikas*).³⁵ The most astounding of the Ekāhas is the Gosava for the attainment of cattle, after performing which one is expected to live like an animal for one year, completely disregarding all decencies of human life.³⁶ This is clearly a case of sympathetic magic.

The three greatest Śrauta-sacrifices, namely Rājasūya, Vājapeya and Aśvamedha, were all in origin popular festivals of political signi-

31. On the occasion of this offering the Yajamāna and his relations, while touching each other, are covered with a piece of cloth (Āp. 11. 16. 13-15). This interesting ceremony clearly symbolises family solidarity.

32. See Caland-Henry, § 141. 15.

33. Keith, *Op. cit.*, p. 330.

34. Hillebrandt, *Ritualliteratur*, § 72.

35. Cf. the interesting description of Vratyastoma in Keith, *Op. cit.*, pp. 337-8; also Haraprasad Sastri, *Absorption of the Vratyas*.

36. Āp. XXII. 13. 2-3: *upa mātaram iyād, upa suasāram, upa ṣagoṭrām; yatra yatrayai 'nam viṣṭhā vindet tad vitiṣṭheta*.

ficance. The utterly non-religious and sometimes revolting character of some of the rites involved in them clearly suggest the culture of an age when Brahmanism, wisely pursuing a policy of compromise instead of trying to suppress outright the crude practices obtaining among the Aryan warriors and the aborigines of India, thought it better to throw over them the mantle of ritual sanctity. The Rājasūya³⁷ is a primitive coronation ceremony transformed into a Soma-sacrifice of one Sūtya-day preceded by a year of preparation. The Purohita, the officers of state, the people and the King's son (whose name is once intentionally mispronounced for that of his father in the ritual!) take active part in the ceremony, of which the most interesting feature is the mimic expedition for booty in course of which the King defeats all his adversaries.—At the Vājayeya, which literally means the “drink of victory,”³⁸ the supremacy of the royal sacrificer is established in the same way by means of a chariot-race at which he beats his competitors.³⁹—The Aśvamedha,⁴⁰ the famous horse-sacrifice of ancient Indian ritual, performed by princes desirous of extending their dominions, is of immemorial antiquity. It has been proved that the main features of the Aśvamedha appear in essentially the same form also in the horse-sacrifices not only of other Indo-European tribes,⁴¹ but also in those of many non-Indo-European peoples.⁴² The revolting practices mentioned in the ritual texts and also in literature in connection with the Aśvamedha were clearly a legacy of past barbarism which the Brahmins were cautious enough not to tamper with too hastily.

Human sacrifice (Puruṣamedha) too is mentioned in Indian ritual literature (see Hillebrandt, § 77), but it is significant that the Śatapatha Brāhmaṇa (vi. 2. 1. 39) gives the name of the man who was the last to actually immolate a human being at the Agnicayana instead of a surrogate victim, and the Puruṣamedha of the Śrauta-sūtras has been declared by Oldenberg (*op. cit.*, p. 362) to be the product of pure fantasy. Yet in view of the persistence of literary tradition about human sacrifices it would perhaps be going too far to altogether deny their existence in India in early times. If the highly cultured Athenian

37. For details see Hillebrandt, *Op. cit.*, § 74.

38. Oldenberg, *Op. cit.*, p. 470.

39. Hillebrandt, *Op. cit.*, § 73.

40. Described in detail by Dumont, *L'Aśvamedha*.

41. See particularly W. Koppers, *Pferdeopfer und Pferdekult der Indogermanen in Wiener Beiträge zur Kulturgeschichte und Linguistik, Jahrgang IV* (1936), pp. 279-411.

42. See Bleichsteiner, *Rossweihe und Pferderennen im Totenkult der kaukasischen Völker in Op. cit.*, pp. 414-495.

soldier-statesman Themistocles could have sacrificed three Persian princes at the battle of Salamis, it need not be surprising if it is discovered that some Indian princes too had on some occasions actually performed human sacrifice to placate the spirits or the people. According to Lecky, "the sacrifices of children to Saturn were very common" in the African province of the Roman Empire at the time of Constantine (*History of European Morals* [Issued for the Rationalist Press Association, Limited, 1911], vol. II, p. 14, col. 1). "The gentle vegetarian Porphyry knows that in Chios, according to tradition, there had been a Dionysos called Omadius, the Raw One, and that the sacrifice he used to exact was the tearing of a man to pieces" (Harrison, *op. cit.*, p. 484). In Rome, even apart from the gladiatorial combats which owed their origin to the Etruscan custom of immolating human victims at burial, human sacrifice became a part of the popular religion and is known to have been actually performed from before the second Punic War onwards (Wissowa, *Religion und Kultus der Römer*, p. 54).

It will be clear from this rapid survey of the principal Śrauta-sacrifices that they are composed of very heterogeneous elements. The two chief strains in them were doubtless the Indo-European fire-cult elaborated in India separately in the Ātharvanic ritual, and the Indo-Iranian Soma-cult⁴³ which, though later than the fire-cult in origin, attained supremacy over the latter, both in Iran and India, through the assiduous efforts of energetic priestly guilds. But Zarathustra, through his reforms, revived the languishing fire-cult in Iran, and, reinforced by Zarathustrian ethics, it became the central feature of the Iranian religion. In India, however, the Soma-cult reigned supreme ever afterwards, the fire-cult being relegated to a subordinate position by the priestly families. Nevertheless, in Gṛhya-ritual, i. e. in the intimate life of the common people, the fire-cult maintained its own in spite of the priestly predilection for the cult of the exhilarating Soma.⁴⁴

43. which, according to Oldenberg, *Op. cit.*, p. 364, replaced an older honey-cult.

44. Can it be that the fire-cult was evolved by the Indo-European Daiva-worshippers and the Soma-cult by the Indo-Iranian Asura-worshippers?

MISCELLANEA

(1)

CONTACTS BETWEEN KAUṬILYA AND VĀTSYĀYANA..

Kauṭilya is concerned with the study of Artha as represented in political science, Vātsyāyana with the study of Kāma in the specialised form of Erotics. Each leaves the opposite field pretty well clear for the other but there are points of contact which

(a) give a peculiar force of meaning, which, but for this contact, might have been missed ;

(b) reveal a general identity of political and cultural background, though not necessarily therefore contemporaneity ;

(c) supplement from the Arthaśāstra certain ideas more relevant to Kāma which Vātsyāyana has not touched on or detailed.

This comparison may best start from a significant identity of expression noticed by Dr. Samasastry.¹ Why should Vātsyāyana state the Triad of "Artha Dharma Kāma" ² with *Artha* first, an order neither logical nor appropriate to his theme, except as a reminiscence of the same words in the *same order*, which is here appropriate to the theme, in Kauṭilya's Arthaśāstra³. Especially when the significant words occur as part of a long and tedious discussion on the theme of Consequences and Doubtful Cases, the scheme of which is common to both works. At the risk of incompleteness I would avoid other comparisons already made by Dr. Samasastry, except to point out the special force which attaches to mention by Vātsyāyana of the **सूत्राध्यक्षः** Superintendent of Thread as an officer helpful in the Princess' love affairs⁴: **विषयानायाप्रवृत्तिभिः सह सूत्राध्यक्षस्य** K. A. S. II 23 shows that the Superintendent of Thread was particularly concerned with women including widows (**प्रोषितविधवा**) to whom he issues yarn for piecemeal spinning. He is the one official for whom a fine is fixed for looking at a woman's face.

(At this point I would make two comments in parenthesis,

1. P. 12—Translation K. A. S. Bangalore 1915, p. xii.

2. V. K. S. VI. vi 5.—Edn. Kashi Sanskrit Series, 1929.

3. K. A. S. IX—vii p. 361. Edn. Mysore Sanskrit Series, 37/54, 1919.

3a. V. K. S. V v. 8,

a. Does प्रव्रजिता in K. A. S. really mean women with husbands abroad rather than the equivalent of प्रेषिता in V. K. S. ?

b. The word श्रङ्गुष्ठसंदंशनम् at the end of this chapter in K. A. S. does not mean cutting off the thumbs as translated by Dr. Sāmaśāstry⁴, but some kind of punishment or torture by squeezing them (e.g. Thumb Screw). The root दश् + सम् is a word fairly frequent both in the Arthasāstra and Kāmasūtra always with the sense of compression or close attachment ; e. g. संदंशवधः as in K. A. S. IV xi is something quite different from mutilation तदेवच्छेदयेत् ।)

The Arthasāstra adds a good deal to the objective study of the *Veśyā* from the view point always of her civic position and status rather than that of her emotional problems, coquetry and intrigue, which interest Vātsyāyana ; but there is one small but interesting point of comparison in the conception of woman as a kind of "saleable wares". Vātsyāyana thinks both of the eligible bride and of the *Veśyā* in this light. Both must expose themselves to view "because of their analogy with saleable wares" पण्यसमर्थात् ।⁵

Kauṭilya implies the same thought in listing among miscellaneous offences, that of visiting a prostitute engaged by some one else and buying goods bespoken by another.⁶ (The *Rūpajīvī*, the term here used by Kauṭilya, is one of Vātsyāyana's nine types⁷, but is presumably used more generally by Kauṭilya.) Another point of verbal identity may be mentioned in the reference to the "Courtesan's daughter" गणिकादुहित्वं whom Ghoṭakamukha classed with servant-maids, as a seventh alternative for a suitor's attention⁸, and an offence against whom Kauṭilya penalises just before a similar offence against a *Dāsī*⁹. Not to dwell longer, however, on verbal coincidences it may be said that Kauṭilya alone is concerned with the position of the Prostitutes as a definite (and revenue making) element in the State as in his chapter on the Superintendent of Prostitutes, an aspect of no interest to Vātsyāyana. Both writers recognise their position in the Royal Quarters. Kauṭilya assigns the quarters S. W. by South to the *Rūpajīvī*, *Tālāpacāra* and *Vaiśya* (petty traders, a word for which in the

4. Op. cit.

5. V. K. S. III i. 16. VI i. 7.

6. K. A. S. III 20 page 198.

7. V. K. S. VI vi. 54.

8. V. K. S. I v. 24.

9. K. A. S. IV 12 page 232.

context one would be inclined to substitute *Vēśyā* were it not for the preceding पक्कन्नसुरामांसण्याः¹⁰; once more the *Rūpājivī* is associated with saleable commodities); while *Vātsyāyana* mentions the *Veśyā* only with the dancing girl in the afternoon visits of the Prince to the Women's Quarters¹¹ : ततो वेश्या आभ्यन्तरिका नाटकीयाश्च ।

There is not really much in common between the two writers in the discussion of the domestic life of Princes and the Nobility. *Kauṭilya* has a good deal to say about the lay-out and routine of the women's quarters, while *Vātsyāyana* is more concerned with psychological study of the wife's conduct as single wife, or in reaction to co-wives, with the erotic adventures of the prince, and with the escapades of strangers in the women's quarters. *Kauṭilya*, for instance, has no place for the repulsive local customs in which *Vātsyāyana* revels¹². There is, however, a specific contact in the conception of the "Subhagā", the favourite wife. This lady styled राजमहिषीसुभगा or सुभगा becomes in the *Arthaśāstra* an unwilling instrument for poisoning the King in an attempt to recover favour.¹³ *Vātsyāyana* uses the word as a flattering form of address, but also precisely in *Kauṭilya*'s technical sense of favourite wife when speaking of a typical zenana intrigue¹⁴

भूतपूर्वसुभगया प्रोत्साह्य कलहयेत् "Set on a former favourite to start a quarrel with her".

It would be interesting to examine at length *Kauṭilya*'s very ample treatment of the possibilities of womankind as spy and vamp, consciously and unconsciously employed, but space forbids. Suffice to say that she will be found in the *Arthaśāstra* fulfilling all the functions of the female in a modern thriller, whether as a lure to destruction, as the creator of jealousy, or as the actual murderer, usually by poison (रसदा) । *Vātsyāyana* is familiar with her at least in the latter capacity, e.g. in V. K. S. I v 20, where he outlines in a few words the plot of the lover seducing the wife in order that she may poison his enemy, her husband's friend !

Finally one may mention allusions in *Vātsyāyana* to the *Arthaśāstra* rather by way of parody than of substantial contacts, such as the description of the *Viṭa*, *Piṭhamarda* and *Vidūṣaka* as the "Ministers" of

10. K. A. S. II iv.

11. V. K. S. IV ii 78.

12. V. K. S. V v 32 ff.

13. K. A. S. XII 2.

14. V. K. S. IV ii 17.

Prostitutes and their lovers in affairs of peace and war¹⁵. For the full appreciation of this one must remember that the former two types are as regular attendants on the Courtesan as is the Vidūṣaka on the lover, as Vātsyāyana himself makes clear. Kālidāsa has no use for the two former less pleasant characters, but the Viṭa is well established in the Courtesan's house in Śūdraka's Mṛcchakaṭīka. Similar is the use of the term संधिः for reconciliation after a lovers' quarrel, and we have the conception of lovers who like foreign states are संधेय or असंधेय¹⁷ fit to treat with or not. While the repentant offender at a woman's feet may be regarded as going to extremes in the policy of Sāma (conciliation)¹⁷ : युक्तरूपेण साम्ना पादपतनेन वा ।

This appears to be the only clear hint in Vātsyāyana's Art of Love of the parallelism between love and war which was elaborated by the Roman poet, Ovid, and through this medium became part of the stock-in-trade of Western literature : "Militat omnis amans" "Every lover is at war."

C. W. GURNER.

15. V. K. S. I iv 47.

16. V. K. S. IV ii 23 & VI iv 28.

17. V. K. S. VI iv 1 & VI iv 10.

18. V. K. S. II x 42.

(2)

A NOTE ON THE BASIM COPPER-PLATE INSCRIPTION OF VĀKĀṬAKA VINDHYAŚAKTI II.

It is known to scholars who have read the *Proceedings of the Indian History Congress*, 1939 (pp. x-xi) and *Ind. Hist. Quart.*, March, 1940 (pp. 182-86) that the author of the present note was the first man to make the following suggestions regarding the Basim copper-plate inscription :

(1) that Pravarasena, grandfather of Vindhyaśakti of the Basim grant, is the same as Pravarasena I who was the grandfather of Rudrasena I Vākāṭaka and is known from such records as those of Pravarasena II ; and

(2) that Vindhyaśakti of the Basim grant is not identical with Vindhyaśakti the celebrated founder of the Vākāṭaka dynasty, but that the former was actually the latter's great-grandson.

MM. Prof. V. V. Mirashi was not at first agreeable to these suggestions.¹ It is therefore a matter of satisfaction to me that the above conclusions of mine have been accepted by Prof. Mirashi and Mr. D. B. Mahajan in their paper on the Basim copper-plate inscription recently published in the *Epigraphia Indica*², inspite however of the fact that the learned writers have given me no credit for them. In the present note I shall discuss only one or two observations contained in the above paper of Prof. Mirashi and Mr. Mahajan.

As regards the epithet *dharmma-mahārāja* used in the Basim inscription (lines 1 and 4), it has been observed :³ "The repetition may however be attributed to the carelessness of the drafter of the record." In my opinion the suggestion is highly improbable. I have absolutely no doubt that any Sanskritist to whom a passage like *dharmma-mahārājasya śrī-pravarasena-pautrasya dharmma-mahārājasya śrī-sarvasena-putrasya dharmma-mahārājasya śrī-vindhyaśakter = vacanāt* may be placed for examination would at once notice two clear cases of the *sāpekṣa samāsa* in the expressions *śrī-pravarasena-pautrasya* and *śrī sarvasena-putrasya*. The charge of committing such a foolish mistake of repeating an epithet not even twice but for as many as three times seems to be unjust when levelled against a scribe who is reliable as regards the rest of the record. Prof. Mirashi and M. Mahajan have apparently ignored the fact that the *sāpekṣa samāsa* is often used in early epigraphic literature, especially in the genealogical portion. A few instances may be cited :—

(1) Legend on some coins of Rudradāman : *rājño kṣatrapasa jayadāma-putrasa rājño mahākṣatrapasa rudradāmāsa*.⁴

(2) Gundā inscription of Rudrasimha I : *rājño mahākṣatrapasya svāmi-caṣṭana-prapautrasya rājño kṣatrapasya svāmi-jayadāma-pautrasya rājño mahākṣatrapasya svāmi-rudradāma-putrasya rājño kṣatrapasya svāmi-rudrasihasya*.⁵

(3) Junāgarh fragmentary inscription of Rudrasimha I : *caṣṭanasya prapautrasya rājñāḥ kṣatrapasya svāmi-jayadāma-pautrasya rājño mahākṣatrapasya* . . .⁶

1. *Proc. Ind. Hist. Cong.*, loc. cit.

2. Vol. XXVI, pp. 137 ff.

3. *Ibid*, p. 141, n. 3.

4. Rapson, *Catalogue of the Indian Coins in the British Museum*, p. 78.

5. *Ep. Ind.*, Vol. XVI, p. 235.

6. *Ibid*, p. 241.

(4) Garhā inscription of Rudrasena I : rājño mahākṣatrapasa bhadramukhasa svāmi-caṣṭana-putrapautrasya rājño kṣatrapasa svāmi-jayadāma-putrapautrasya rājño mahākṣatrapasya bhadramukhasya svāmi-rudradāma-pautrasya rājño mahākṣatrapasya bhadramukhasya svāmi-rudrasimha-putrasya rājño mahākṣatrapasya svāmi-rudrasenasya.⁷

(5) Bilsaḍ pillar inscription of Kumāra Gupta I : mahārājādhirāja-śrī-candragupta-putrasya mahārājādhirāja-śrī-samudragupta-putrasya mahādevyām utpannasya mahārājādhirāja-śrī-candragupta-putrasya . . . mahārājādhirāja-śrī-kumāraguptasya.⁸

My reading and interpretation of the Basim record differ in some respects from those of Prof. Mirashi and Mr. Mahajan. For them I may only refer readers to *Ind. Hist. Quart.*, March, 1941, pp. 110-16 and also to my *Select Inscriptions*, Calcutta, 1942, pp. 406-11. It is however gratifying for me to note that the reading *śāsana-vādam* = *pamāna* (line 25) suggested by Dr. B. C. Chhabra is exactly the reading published in my transcript.

In conclusion, I may point out that the supposition "that the Vākātakas had their original home in the South"⁹ is wholly unjustifiable based as it is on wrong premises. There is absolutely no resemblance between the phraseology of the Vākātaka and that of the Pallava charters. The same remark also applies to the section of the *parihāras* which apparently developed, both in the Vākātaka and the Pallava grants, from the exemptions prevalent in Śātavāhana age and noticed in Śātavāhana charters. It should be remembered that the Vākātakas and the Pallavas were both successors of the Śātavāhanas. As regards the name Vākātaka in an inscription at Amarāvati in the Andhra country, it is apparently a personal name and has absolutely nothing to do with the Vākātaka ruling family.¹⁰

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7. *Ibid.*, p. 238.

8. *Corp. Ins. Ind.*, III, p. 43.

9. *Ep. Ind.*, XXVI, pp. 149-50.

10. The fact that comments and controversies are usually not published in the *Epigraphia Indica* no doubt encourages some of its contributors to become uncommunicative about their indebtedness to others. In *Ep. Ind.*, XXV, while editing a Śālaṅkāyana inscription, Mr. R. S. Panchamukhi tries at some length to prove that there was no king named Buddhavarman in the genealogy of the Śālaṅkāyanas. It is curious that his arguments are all to be found in a note entitled *Genealogy of the Śālaṅkāyanas*, published in *Ind. Hist. Quart.*, March, 1933 and reprinted in the *Journ. Dep. Let.* (C. U.), XXVI, 1935, and in the *Successors of the Śātavāhanas*, C. U., 1939.

(3)

CHATURVEDI ON DRĀVIDAPRĀṆĀYĀMA.

Mr. S. P. Chaturvedi in criticising my article "Pūrvācāryaḥ in Pāṇini" which appeared in the D. R. Bhandarkar Volume (1941) has accused me of Drāvidaprāṇāyāma (Nagpur University Journal, Dec. 1941, No. 7, p. 49): What I wanted chiefly to prove in my article is this :—"When Pāṇini mentions a Pūrvācārya at the end of an aphorism he means exactly what he says, namely that the particular view of the Pūrvācārya is not shared by him, even though the forms concerned might not be unknown in the language" (D. R. Bhandarkar Volume, p. 21). Regarding the evidence I adduced to prove my point Mr. Chaturvedi now makes this flattering observation :—"this evidence is no doubt conclusive and very ably put forth" (loc. cit.). Yet he cannot help accusing me of having practised Drāvidaprāṇāyāma, for, in his opinion, this point can be proved simply by a reference to Sūtras like VI. 1. 92 (*vā supy Āpisaleḥ*) in which Pāṇini mentions a Pūrvācārya and also uses the particle *vā*. But after the evidence adduced by me, "which is no doubt conclusive" in the opinion of Mr. Chaturvedi himself, Pāṇ. VI. 1. 92 can be taken only to mean "facultatively, when *sup* follows, in the opinion of Āpisali." Neither *vā* nor *Āpisaleḥ* is redundant in this Sūtra if the principle of interpretation proposed by me and accepted by Mr. Chaturvedi is adhered to. Pāṇini here is simply saying that the rule concerned is facultative in the opinion of Āpisali. How can the Sūtra *conclusively* prove that the view of the Pūrvācārya is not shared by Pāṇini? Only those who unlike Mr. Chaturvedi do not accept my theory that the purpose of mentioning a Pūrvācārya is not merely to make the rule concerned non-obligatory might be tempted to read into this Sūtra something very special. But not Mr. Chaturvedi, unless he revises his own view and rejects my theory. This Sūtra and its likes can at the best suggest but never *prove* my point. Indeed, I am yet unconvinced that my point can at all be proved without the help of what Mr. Chaturvedi has been pleased to call Drāvidaprāṇāyāma.

I have always maintained that "whenever Pāṇini specifically mentions a Pūrvācārya for his views on particular grammatical problems the revered one is mentioned at the end of the sūtra concerned" (D. R. Bhandarkar Volume, p. 21). I still maintain this view, but Mr. Chaturvedi's criticism has convinced me that I should have put in *Italics* the word *for* in this sentence. When Pāṇini in III. 4. 111 quotes Śākaṭāyana it is not *for* his wholly discordant view. Rather it seems to me that Pāṇini here intends to express his disapproval of the Śākaṭāyāniya.

forms *ayuh* etc. by clearly suggesting that they are accepted by no other grammarian. Properly speaking, the Sūtra is *against* the Pūrvācārya, not *for* him. Hence this Sūtra cannot be put in the same category with the Sūtras containing views which Pāṇini at least tolerates without fully approving, i. e. the Sūtras in which the Pūrvācārya is mentioned last.

As for Drāviḍapṛāṇāyāma, may I suggest at the end that even plain walking may seem to be a feat of gymnastics to those who even in mature years would insist on being trundled about by censorious nannies in cosy perambulators rather than trust their own legs?

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(4)

EXCAVATION OF PREHISTORIC SITE IN GUJARAT.

The Gujarati vernacular paper *Prajabandhu* of 28. 12. 41 makes the following announcement :—

“Gujarat Prehistoric Expedition made certain archaeological discoveries on the 8th December in the bed of the Sabarmati. Some of the chief workers were Dr. B. K. Chatterji, Dr. H. D. Sankalia, V. B. Krishnaswami and Amritalall V. Pandeya. The above group of workers achieved extraordinary success in this enterprise. In the course of excavation they discovered hundreds of artifacts and various other objects of the Stone Age (of about fifty thousand years ago). These finds are of immense value. They were exhibited at the Indian Science Congress between the 2nd and the 4th January. The excavation established beyond doubt the great antiquity of the province of Sabarmati. It is to be hoped that the Archaeological Department of the Government of India will undertake further excavations here in cooperation with other scientific bodies.”

We are informed by Dr. B. K. Chatterji that the implementiferous older alluvial conglomerate beds as well as microlithic sites adjoining the Sabarmati valley discovered by him and excavated by him and his colleagues yielded palaeolithic hand-axes, choppers, scrapers of Abbé-villian and Acheulian types, and microliths of the types of lunette, point, scraper, blade etc., as well as fossil-bones. Further we learn from Dr. B. K. Chatterji that the same types of implementiferous beds have been discovered by him in the Worsang valley.

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(5)

PĀRIMDA IN THE INSCRIPTIONS OF AŚOKA.

The expression *aṃdhra-palideṣu* (Shāhbāzgarhī), °*pārimdesu* (Girnār), °*pāladeṣu* (Kālsī) occurs in Rock Edict XIII of Aśoka. As the Pulindas are associated with the Andhras in ancient Indian tradition (*Aitareya-Br.*, VII, 18), it was originally admitted by scholars that *palida*, *pālada*, *pārimda* is no other than the word *pulinda* in Sanskrit. It is of course clear from the form *pārimda* that the actually intended form of *palida*, *pālada* is **pālimda* with vowel-mark and *anuvāra* neglected. But as the philological relation of *pālimda*, *pārimda* with Sanskrit *pulinda*, *paulinda* is not quite apparent, doubts have recently been expressed as regards the identification of the Pārimdas or Pālimdas with the Pulindas (Hultsch, *C. I. I.*, I, p. 48 n). Some scholars think in this connection of the Pāradas of the Purāṇas (Raychaudhuri, *P. A. H.I.*, 1938, p. 259); but, though *pārada* can be equated with the incomplete form *pālada*, the equation *pārada* = *pārimda*, **pālimda* would be rather unconvincing from the philological point of view. Sometimes the Pārimdas are even identified with the Vārendras, people of Varendra or North Bengal (Bhandarkar, *Aśoka*, 1932, pp. 36-37). This suggestion is also unsatisfactory, as the Andhras are not known to have had anything to do with Varendra or the Vārendras and as the name Varendra (which is unknown to Epic and Puranic geography and cannot be traced in any early work or record) is met with in literature about *fourteen centuries after Aśoka*. It is therefore desirable to examine the philological objections to see if the Pārimdas or *Pālimdas can really be identified with the Pulindas or Paulindas who are traditionally associated with the Andhras or Āndhras.

The objections to the equation *pārimda*, **pālimda* = *pulinda*, *paulinda*, on grounds of philology, are only two : (1) the change of the vowel *u* or *au* of *p* to *ā* ; (2) the change of *l* of *li* to *r*. The nature of the difficulties does not however appear to be quite insurmountable.

(1) The change of *au* to *ā* is noticed in Pāli and Prakrit, e.g., in the word *gāraṇa* = Sanskrit *gaurava*, which also occurs in Aśoka's Bairāt-Bhābrū inscription, l. 2, under the form *gālava*. The change of *paulinda* to *pālimda* is therefore not impossible. It may however be noted that this change of *au* to *ā* is essentially due to the change of *u* to *a* (e.g. *guru* = *garu* directly from which *gāraṇa* by the ordinary rule of *vṛddhi*), instances of which are abundant in Pāli, Prakrit and epigraphic literature ; cf. *mukula* = *makula*, *sphurati* = *pharati*, *mukuta* = *maūda*, *yudhiṣṭhira* = *jahitṭhila*, *guru* = *garu*, *upari* = *qvari*, etc. See V. Bhattacharya, *Pāliprakāśa*, p. 5 n, pp. 53-54 and n ;

Vararuci, *Prākṛtaprakāśa*, I, 21 and 43. It therefore seems that *pulinda* was changed to *palinda* in Prakrit from which was derived by *vṛddhi* the form *pālinda*.

(2) There are some instances of the change of *l* to *r* in the Standard Prakrit called *Māhārāṣṭrī* by later grammarians; e. g., *kila* = *kira*, *sthūla* = *thora*. See Vararuci, IX, 5; Hemacandra, I, 124, 255, II, 99. The change is abundantly illustrated by the songs of Vidyāpati (14th-15th century) representing a dialect of North Bihar; e. g., *añcala* = *ācara*, *cañcala* = *cācara*, *kajjala* = *kājala* = *kājara*, *velā* = *-veri*, etc. According to later Prakrit grammarians, such as Rāma Śarman (17th century), *r* becomes *l* and *l* becomes *r* in Pāñcāla-Paiśācika, while either *r* or *l* may be used for *r* or *l* in Gauḍa-Paiśācika (Sir A. Mookerjee S. J. Vol., *Orientalia*, II, p. 137). It should not however be thought that the change of *l* to *r* is a late development, as it is actually noticed in very early records; cf., e. g., *thorasisi* = Sanskrit *sthaulaśirṣin* in the Bhaṭṭiprolu casket inscriptions (casket No. 2, l. 4 on the centre of the lid) belonging to the second century B. C. i. e. to a period not much later than that of the records of Aśoka. *Pārimda* as an alternate Prakrit form of *pālinda* is thus not impossible.

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REVIEWS

THE DEVELOPMENT OF HINDU ICONOGRAPHY By Dr. Jitendra Nath Banerjea, M.A., Ph.D., Lecturer in the Departments of Ancient Indian History and Culture, Pali and Sanskrit, Calcutta University, 1941, Royal 8vo.

If this be taken as a sample of Doctorate thesis, it cannot but speak eloquently of the high standard of research work produced by the teachers and alumni of the University of Calcutta. This is indeed a remarkable publication on the subject, which represents a distinct landmark in the history of successive attempts made by several capable writers to unveil the secrets of Hindu iconography since the memorable publication of Gopinath Rao's *Elements of Hindu Iconography*. The last is not necessarily the best. But Dr. Banerjea's is certainly the best work in the field, at least in the sense that here we have a very fruitful result of earnest efforts solely directed to visualising the process of development of Hindu iconography on solid archaeological data. Dr. Banerjea's strongest point is his intimate knowledge of Indian coins and seals and bas-reliefs, which he has fully utilised in three chapters, Chs. III-V. His first hand knowledge of Sanskrit texts has enabled him to deal with highly technical canons of iconometry with rare mastery.

He has with consummate skill enhanced the value of his work by critically examining the evidences bearing on the much disputed problem of antiquity of image-worship in India in Ch. II and by carefully analysing the factors that contributed to the development of iconoplastic art in India in Ch. VI. Though the field surveyed is very wide, he guides us rationally to view things as they are and as they shaped themselves through ages. And his findings on all the controversial points would seem sound and acceptable.

If I have understood him aright, in his opinion the Vedic hymns are far from proving the worship of the gods and goddesses in their iconic forms by the cultural section of the Indo-Aryan community. At the same time the evidence of these hymns is insufficient for determining what was prevalent among the mass of Indian people. The *devāyatanas*, *devālayas* or *devagrhas* ("god's abode", "temples"), mentioned in the Grhyasūtras, find mention also in the oldest portion of the Pali Canon, particularly in connection with the building of a new city. But the impression created is as if the *devatās* or benevolent spirits were waiting to take their respective abodes, there being no definite suggestion as to the installation of images in those temples. The same impression is created by the Mahāsamaya Suttanta which offers us a formidable list of gods and goddesses worshipped by the people of India. The *Caityas* mentioned were no more than haunted trees, haunted woodlands, haunted pleasancess. By the word *manussa-vinggaha* (Pāṭimokkha) and *vimba* is meant a living bodily form, and not an

image. While speaking of *śilpa* or art, the Aitareya Brāhmaṇa (VI. 1) mentions the toy elephants, horses and chariots (*hasti-aśva-ratha*) made in imitation of natural objects (*devaśilpānām anukṛtiḥ*), but does not mention any sensible representation of deities. Even Aśoka's edicts, while speaking of popular religious demonstrations of his time, expressly mention the symbolical representations of the gods by means of celestial mansions, elephants and masses of fire. And yet it is too much to assume that the Buddhists were the first to carve the figures of the various gods and demi-gods in stone without having any concrete models before them. I may particularly refer to the soldier-like figuration of the sun at Bharhut which, according to Varāhamihira, was the Udīcyā or North-western mode of sensible representation of the sun. In the later representations, the soldier-like figure of the god is placed in one-wheeled chariots drawn each by seven horses. The poetic description of the sun moving in chariots drawn by odd numbers of horses is in the Vedic hymns. Thus we get in later representations a combination of a concrete figure of the sun with appurtenances supplied by Vedic poetry. The Bharhut Stūpa railing exhibits several conventional representations of Śrī, Sun, Moon, etc. The eldest of the figurines of Yakṣas and Devatās are Egyptian in shape and form. Dr. Banerjea does not dismiss the evidence of the statues found at Mohen-jo-daro on the ground of the default of inscriptions to tell us what they stand for. It is true that the Vedic poets and Upaniṣadic thinkers delineated and conceived the gods in terms of abstract qualities. But there must have existed side by side in the country concrete representations of them either in stone, or in clay, or on the canvas. The Bharhut sculptures serve as a meeting place of the two processes of development, namely, that of concrete representation and that of poetic personification. The evidence of Pāṇini cited by Dr. Banerjea is conclusive as to the existence of the iconic representations of the popular deities. I may draw the author's attention to the evidence of the Pali Vinaya Piṭaka proving beyond doubt the existence of figurines of goddesses curved in wood (*dāru-dhitalikā*) as well as drawn in plaster painting (*lepacitta*).

But in the work before us we have a very fair and dispassionate account of facts relating to Hindu iconography as well as a critical estimate of views and evidences relied upon. The author has offered his own suggestions for consideration. And he must be congratulated upon a brilliant execution of the task he set himself to accomplish.

B. M. BARUA,

EARLY HISTORY OF THE VAIṢṆAVA FAITH AND MOVEMENT IN BENGAL from Sanskrit and Bengali sources, by Sushil Kumar De, M.A. (Calcutta), D.Lit. (London), Professor and Head of the Department of Sanskrit, University of Dacca ; pp. iv+535 ; Calcutta, 1942.

This is a great book destined to be treasured for years to come as the best exposition of Bengal Vaiṣṇavism. It easily outshines all that has been hitherto written on the subject in Bengali and English. There is already a spate of books and monographs on Bengal Vaiṣṇavism both by Indians and Europeans. But most of the Indian authors, to all appearance, were devout Vaiṣṇavas, to whom it would be simply plunging headlong into hell-fire to approach the subject in a spirit of criticism ; to the European writers, on the other hand, Bengal Vaiṣṇavism appeared to be nothing but an "emasculated ritual of emotional debauchery" (p. 420). From the works of none of these authors is it apparent, however, that they had actually trudged their way through the voluminous writings of the Vṛndāvana Gosvāmins with the necessary meticulous circumspection and understanding as just Dr. De has done. The detailed analysis of the whole canoncial literature of Bengal Vaiṣṇavism contained in this volume is naturally the most valuable part of it, in perusing which everyone will surely be moved to admire the infinite skill and tact displayed by the author in presenting his highly sensuous material in a wonderfully balanced and elegant English, maintaining throughout an attitude of almost stoical ataraxy which may seem sinister to many a devout heart appalled by this unfamiliar, though by no means unsympathetic, spirit of objective inquiry.

Dr. De has definitely rejected the theory that Bengal Vaiṣṇavism is of Mādhva inspiration, though he does not deny the possibility of Mādhva influence. All the forces—or rather the absence thereof—necessary for the emergence of an anti-intellectual emotional religion were indeed present in Bengal about the time of the advent of Caitanya. The country had sunk to the lowest depth of political ignominy ; its government was in the hands of savage Abyssinian slaves whose lustful oppression and plunderings were limited only by their own lack of intelligence. The weak and emasculated people of the country could not even think of creative joy ; they were thirsting for diversion from action to emotion. So they fell *en masse* for artificial emotion, namely Tāntric orgy and Vaiṣṇava ecstasy, in both of which the ultimate appeal is to the most primitive instinct which man shares with all the other animals. In similar critical periods of complete national frustration similar unnatural cults of "naturalism" are known to have emerged also among other peoples : We have only to remember the Russian Khlysty described by Fülöp-Miller (*The Mind and Face of Bolshevism*, pp. 82-4) and Diderot's Otāiti dangled before the French public on the eve of the great Revolution of which Taine has left us this edifying picture : "La pudeur, comme le vêtement, est une invention et une convention ; il n'y a de bonheur et des mœurs que dans les pays où *la loi autorise l'instinct*,

à Otaiti, par exemple, où le mariage dure un moins, souvent un jour, parfois un quart d'heure, où l'on se prend et l'on se quitte à volonté, où, par hospitalité, le soir, on offre ses filles et sa femme à son hôte, où le fils épouse la mère par politesse, où l'union des sexes est une fête religieuse que l'on célèbre en public" (*L'Ancien Régime*, treizième édition, p. 285). In Bengal too, as in Otaiti, the people wanted a religion that would invest instinct with all authority and supersede the deductions of reason by the intuitions of ecstasy. This was supplied by Caitanya who, therefore, was at once hailed as a prophet. But a prophet is after all what his apostles make of him. The secret of the tremendous success of Caitanyaism is to be looked for not so much in the mystic visions of a young enthusiast of supernormal emotional capacity as in the patient and systematic theological writings of the early Church fathers of the religion. Like every enthusiast, Caitanya inflamed everything but discovered nothing. But he inflamed, among others, Rūpa and Sanātana and their nephew Jīva. All of them were astute theologians trained in the scholastic methods of traditional philosophy, and they also knew where lay the chief weakness of that philosophy: it lay, namely, in the recognition accorded to revealed texts as a valid means of knowledge. The Śrīmadbhāgavata being the Bible and Koran of the Vaiṣṇavas, nobody could reasonably expect them to deny the status of Śruti to the Purāṇas, and that point once gained what was there on earth that could not be proved to be in conformity with Śruti-pramāṇa? The Vaiṣṇava philosophers threw overboard all the other Pramāṇas, not excluding Pratyakṣa and Anumāna, which had survived, though in a severely attenuated form, the hurricane of devastating Buddhist criticism. But logic, thus disgraced at the hands of the Vaiṣṇavas, had ample revenge on its devout violators, when through anxiety not to overstep the boundary of empirical reason in their split-hair analysis of mind and spirit they had to accept without professing—and apply to noble purpose—all the canons of traditional logic they had unceremoniously rejected at the start: this is at least the impression a careful student will gather from a perusal of the two difficult chapters "The Devotional Sentiments" and "Theology and Philosophy" in the book under review, on the publication of which we extend our heartiest congratulations to its erudite autho

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INTRODUCTION TO ARDHAMAGADHĪ by A. M. Ghatage, M.A., Ph.D.,
Rajaram College, Kolhapur : pp. xii+253 ; Kolhapur 1941.

This is an extremely well-written book which every student of Prākṛit, specially if a beginner, should make it a point to read. In the chapters on

phonology the author has dealt with his dialect from the view-point of historical grammar, though his treatment of morphology and syntax is modestly descriptive. The whole book is very closely written, so that it would be difficult to point out any superfluous words or sentences in it. In the phonology portion the author has almost on every page touched unsolved knotty problems which he perhaps should have avoided, for, evidently due to lack of space, he could not do justice to them. It is rather surprising that the various phenomena of the Morengesetz ("law of moric quantity" rather than "law of metrical length" as the author puts it) have been dispersed under different heads; from the manner in which the relevant material has been presented a student will hardly be able to understand that *vāsa* (= *varṣa*) and *vanika* (= *vakra*) are the results of essentially the same tendency. By the way, it is rather hazardous to assume that *aśva* at first changed to *assa* and then to *āsa* (p. 68). Strange cases like Pāli *niḍḍa* (= *nīḍa*) and Prākṛit *kiḍḍā* (= *krīḍā*) render doubtful what otherwise would certainly have been regarded as the normal course of mutation. Regarding *śunaka* (p. 14), it should have been mentioned at least that Geiger (*Pāli Literatur und Sprache*, § 40. 1 b) derives it from *śunaka*. In § 15 the author suggests that short *e* and *o* are unknown in Sanskrit. But they are quite common in the Vedic language, and I have noted not a few cases of short *e* and *o* in the language of the Mahābhārata.

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INTRODUCTION TO INDIAN TEXTUAL CRITICISM by S. M. Katre, M.A., Ph.D. (London), Professor of Indo-European Philology, Deccan College Post-Graduate and Research Institute, Poona, Editor, New Indian Antiquary; with Appendix II by P. K. Gode, M.A., Curator, Bhandarkar Oriental Research Institute, Poona, Joint-Editor, New Indian Antiquary; Karnatak Publishing House, Bombay; pp. xiii+148.

This little book will certainly prove useful to scholars engaged in editing texts directly from manuscripts. Dr. Katre has given here a lucid exposition of the technique evolved by Dr. Sukthankar and his collaborators, and he has also drawn upon the relevant sections in the Companions of Greek and Latin Studies and works on higher textual criticism like Birt's *Kritik und Hermeneutik* in Iwan Müller's *Handbuch der Altertumswissenschaft*. His book would have further gained in value if he had not ignored Esteller's *Die Älteste Rezension des Mahānāṭakam* (Abhandlungen für die Kunde des Morgenlandes XXI, 7; Leipzig 1936) which is certainly one of the most remarkable works we have to date on Indian textual criticism. When speaking of the value of Purāṇic ver-

sions of standard works (p. 34) the author should have at least mentioned the interesting results attained by Losch in his *Die Yājñavalkyasmṛiti verglichen mit den Parallelen des Agni- und Garuḍapurāṇa* (Bonn 1927). As for *Śakuntala*, are we to understand that the Padmapurāṇa-version of the story was drawn upon by Kālidāsa? In spite of Winternitz and Haradatta Sarmā this is not correct. As K. C. Chattopadhyaya has convincingly demonstrated, "a careful study of the Śakuntalā story in the *Padmapurāṇa* forces us to the conclusion that the Purāṇa knew Kālidāsa's drama very intimately" (*The Allahabad University Magazine*, 1938, p. 409). It is rather surprising that the author applying Sukthankar's methods could not arrive at this unequivocal conclusion.—I am not sure that it is advisable under any circumstances to rely on the Kāvya-writers for textual criticism of the epics; Kālidāsa's amazing errors in dealing with the Rāmāyaṇa-story (cf., for instance, Mallinātha's comments on Raghuv. VI. 48, where he points out that the statement about Mathurā contained in this passage is contradicted by the poet's own statement in Raghuv. XV. 28) are not at all inspiring of confidence. Besides, how shall we know that the classical writers had not themselves fallen victim to the corrupt text-tradition of the Epics? These questions have been discussed threadbare in the literature on Homer-criticism which Dr. Katre has completely ignored. The dangers encountered in attempting to emend Homer in the light of quotations in Plato and other classical writers are too well known.—In connection with what the author says on p. 4 about the knowledge of writing in Ancient India, I would like to remind him that the original purpose to which the art of writing was applied in ancient civilisations was to conceal knowledge, not to reveal it (see Gilbert Murray, *The Rise of the Greek Epic*, second edition, pp. 117-8).—One aspect of manuscript-tradition seems to have escaped the author: highly respectable grammatical forms are known to have arisen in languages simply through the bizarrerie of manuscript-tradition; cf., e. g. the genitive ending -ī for -i in Latin (see Sommer, *Handbuch der Lateinischen Laut- und Formenlehre*, zweite und dritte Auflage, p. 376).—*Tantrākhyāyika* has been thrice misspelt °kā on p. 44.

BATAKRISHNA GHOSH.

SELECT INSCRIPTIONS BEARING ON INDIAN HISTORY AND CIVILIZATION, Volume I, From the Sixth Century B. C. to the Sixth Century A.D., Edited by Dines Chandra Sircar M.A., Ph.D., pp. xli+530; With 56 Plates; Published by the University of Calcutta, 1942.

Dr. Sircar, though one of the younger scholars of the Calcutta University, has already established an international reputation by his amazingly varied and

valuable publications on different branches of Indian History and Epigraphy. His reputation will be further enhanced by this book, the value of which must not be minimised only because the inscriptions contained in it had been published before. Altogether two hundred and forty-two inscriptions, large and small, with brief explanatory notes, and Sanskrit *chāyā* where the language of the inscription is not Sanskrit, have been presented in this volume, every page of which bears witness to the author's skill and tact and conscientious industry. It will be a boon not only to the students for whom it is primarily intended, but also to those, who, though interested in the vast inscriptional literature in Sanskrit languages, cannot find time to look up the material in the specialised periodicals not easily available. The volume very properly begins with a few well-chosen Old Persian inscriptions and also contains quite a number from Ceylon, Central Asia, Burma, Malay Peninsula, Borneo, Java and Champā.—In a work of such magnitude it will be easy for everybody to pick out points of controversy of which perhaps the peculiar inscriptional term *pādānudhyāta* is the most obvious one. As in his previous publications, so in this volume too (p. 270, f.n. 6), Dr. Sircar has suggested for this word the meaning "favoured", which has been recently endorsed also by the distinguished Sanskritist Prof. K. C. Chattopadhyaya. But this meaning cannot be accepted straightaway,—if only because it departs too far from the sense attaching to the basic root *dhyā*. Almost from the beginning of epigraphic research in India it was tacitly assumed that the compound verb *anu-dhyā-* must have an active meaning, and that *anudhyāta* is in some mysterious way equivalent to *anudhyātī*. But there is no basis for this double assumption. The compound verb *anu-dhyā-* is medial in meaning, not active, and it signifies "to be steeped in meditation"; cf. Mahābhārata XII. 127. 19 : *taṁ anudhyātaṁ ālakṣya* "seeing him steeped in meditation". The inscriptional term *pādānudhyāta* therefore literally signifies "steeped in the meditation of the feet." This meaning, so far as I can see, excellently fits most of the relevant passages in inscriptions. In rare cases the meaning "permitted" may have to be accepted on circumstantial evidence. But even then it will have to be explained how this peculiar sense grew out of the original one evident in the Mahābhārata passage quoted above.

BATAKRISHNA GHOSH.

SOME HISTORICAL ASPECTS OF THE INSCRIPTIONS OF BENGAL [Pre-Muhammadan Epochs], by Benoychandra Sen, M.A., B.L., Ph.D. (Lond.), Lecturer in Ancient Indian History and Culture, Pali and Sanskrit, Calcutta University, Pp. lxxviii+613; Published by the University of Calcutta, 1942.

Whoever reads this book must constantly keep in mind—unless he is determined to do the author injustice—that Dr. Sen has been writing a *source-book*

of history and therefore could not afford to concede to Clio, the first of the Muses, adequate opportunity to display her charms : in fact his book looks more like Vulcan's workshop than Clio's boudoir. Historical aspects of the inscriptions—not of Bengal only as the modest title of the book may suggest—have been discussed here with ruthless thoroughness and put to maximum utilisation. The author is cautious to the point of forbidding his judgement to be moved through dearth of absolutely dependable data to seek succour from constructive imagination. This attitude is responsible for some unimaginative criticism of constructive theories put forward by others,—for instance, Bhandarkar's ingenious theory about the Saṃvaṅgiya confederacy (p. 81). We have to remember that Pravaṅga and Upavaṅga are actually mentioned in literature, and the forms actually appearing in the inscription concerned are *savagīy(a)nam* and *saṃva-gīyānam* respectively. Under the circumstances, it seems to me, Bhandarkar was fully justified in suggesting that the word intended was *saṃvaṅgiyānam*, and his theory stands unshaken until and unless an alternative better theory is courageously put forward to replace it.—The bulk of the book is devoted to political chronometry, but its third and concluding Part dealing with administration under the Pālas and the Senas will prove interesting and stimulating also to the uninitiated. In this connection I wish to point out—what to my knowledge has not been noticed by anybody yet—that the time-honoured Indian official designation *mahāmātra* seems to have found its way into Greek vocabulary ! Hesychius, the famous Greek lexicographer of the third century A.D., explains the Indian loan-word *Mamātrai* by “*hoi stratēgoi par' Indois*” (quotation in Tarn, *The Greeks in Bactria and India*, p. 377 f.n. 5), which means “commanders (or rulers) among Indians.” The apparent disagreement in form between Gr. *mamātrai* and Skt. *mahāmātrāḥ* can be fully explained philologically. But we have to remember that Hesychius' Lexicon has been handed down to us in only one very corrupt and late manuscript.

BATAKRISHNA GHOSH.

RUDRA-SIVA : Dr. S. Subrahmanya Aiyar Lectures, 1939-40, by Dr. N. Venkataramanayya, M.A., Ph.D., Reader in Indian History and Archaeology, University of Madras 1941 ; pp. vi+83.

The last two sentences of this curious but stimulating little book are : “All the characteristics which are supposed to be the hall-mark of Dravidism are thus definitely traceable to the Vedas. There are therefore no valid grounds for presuming a non-Aryan origin for the Puranic Śiva”. But the characteristics of Dravidism not having been accurately formulated by the author or any of his predecessors in the field no one can decide if *all* of them can be traced to the

Vedas, and the Aryan religion reconstructed in outline on the basis of the points of similarity among the primitive religions of Indo-European-speaking tribes showing no god towards whom the attitude of the worshippers can be proved to have been one of *do ut abeas* as towards the Rudra-gods of India and the *Theoi apopompaioi* of Greece, it is quite reasonable to assume as a working hypothesis that the gods of aversion were taken over by the Aryans from the peoples among whom their tribes settled down in historical times. Author apparently does not know Arbman's excellent book on Rudra, and nowhere has he betrayed an intimate knowledge of the Vedic texts with which he has been operating. Nevertheless, his theories are extremely daring, e.g., Rudra was an Aryan deity (p. 21) of solar origin (p. 27). And he has proved to his own satisfaction that the cult of the phallus is "the natural product of the evolution of primitive ideas inherent in the Aryan religion from the beginning" (p. 55), and that "the great Ishtar herself accompanied the first band of Aryans to the plains of Hindustan" (p. 64) who had adopted her cult from the Babylonians (p. 70). One cannot help thinking after reading this book that the author has tried to pay back the Aryan critics of Dravidian culture in their own coin. So far as Indian critics are concerned, this, however, was not necessary; for no Indian to-day, outside of lunatic asylum, would claim to be a pure Aryan.—By the way, Vedic *anās* does not necessarily mean "noseless" (p. 37); it may also mean "mouthless", i. e. "speechless" (*an-ās*); even to-day the Russian word for "German" literally means "dumb". The non-Aryans of India, whose speech was unintelligible to the Aryan invaders, might have been called "speechless" by them.

BATAKRISHNA GHOSH.

BULLETIN OF THE DECCAN COLLEGE RESEARCH INSTITUTE; Vol.
III. No. 3.

The first article is by S. M. Katre who, following a suggestion thrown out by Prof. Renou, has opened herewith a series of studies in the rhythm of Old Indo-Aryan vocables. The present study is devoted solely to the nominal compounds of the Śatapatha Brāhmaṇa as collected by Madame Wilman-Grabowska. If Dr. Katre had examined the lists prepared by this distinguished Polish Sanskritist he would have doubtless been able to avoid the errors committed by her. But Dr. Katre has not done that. In consequence, he has unwittingly repeated some of the mistakes of Madame W-G. Thus the word *pūrvāhuti*, though figuring in Madame W-G's list, is not a compound at all, as I pointed out long ago (*IHQ.*, VIII, 1932, p. 301), but Dr. Katre has nevertheless included it in his (IV-13. 44). There is no reason to think, however, that the number of similar

wrong entries in Madame W-G's lists is very large, and therefore the statistical results arrived at by Dr. Katre cannot be far wrong. A rigorous formulation of these statistical results would have supplied what the scholarly world would obviously expect from him.—Dr. Taraporewala in his short article on "Gāthā metre and chanting" has made the valuable suggestion that "the text of the Gāthās as we have it to day represents more the *gāna*-text adopted for chanting". This should explain—Dr. Taraporewala has not mentioned it—the protraction of final vowels in the Gāthās. I fully endorse his view that in the Veda "each pāda is a unit of sense as well as a unit of verse". In my Post-Graduate lectures on R̥gvedic interpretation I have been for many years advocating precisely this view. It is however surprising to learn that "only a few months ago" Dr. Taraporewala discovered that mantras undergo variations when chanted to Sāmans. —The best contribution in this volume is undoubtedly Mehendale's "A Comparative Grammar of Aśokan Inscriptions" of which I read and admired almost every line: here we have an excellent comparative treatment of the phonology of Aśokan inscriptions. It is to be hoped that the other parts of the work will soon be out.—The "Comparative Etymological Index" by Katre to his "Formation of Konkani" is in fact a compact and well-planned etymological dictionary which will certainly be useful.—Highly interesting is Sankalia's "Cultural Significance of the Personal Names in the Early Inscriptions of the Deccan". Author has skilfully arranged the names, giving of each the suffix, and the caste, race, religion etc. of the bearer of it. It appears that in early Deccan the father and the son had often the same personal name: this seems to be an intermediate stage between varying personal designation without any family-name and varying personal designation with a fixed family-name. In Bengal a fixed family-name with varying personal designations can be traced at least from the sixth century A.D. (see *Indian Linguistics*, Vol. VIII, Part I, p. 9). When and how far did the same custom develop in other parts of India? Author would do well to consult the works of Schulze, Solmsen, Hilka and Betty Heimann when dealing further with Indian proper-names.

BATAKRISHNA GHOSH.

MAGADHA ARCHITECTURE AND CULTURE by Sris Chandra Chatterjee, C.E. Sthapatya Visarad; published by the Calcutta University; D/C 8 vo, pp. xviii plus 114 with 1 Map and 46 illustrations in art paper. Price Rs. 5/-.

In his foreword Dr. Syama Prasad Mookerjee has rightly observed that the "purpose of the publication is to present before every cultured Indian, multi-coloured pictures of the glorious days of Magadha".

Magadha maintained not only its sovereignty over India but also its individuality in art and culture for many centuries. It inspired architectural conceptions of other Indian Schools of Art. Nālandā evolved a very high standard of architectural style. The tomb of Sher Shah in Sasaram exhibits a delightfully powerful blending of Hindu and Muslim cultural traditions.

The Monograph under review gives a vivid description of the cultural and architectural legacies of Magadha. It is divided into 6 sections containing the History of Magadha, the Message of Magadha, Magadha Architecture under Moslem Rule and so forth. The last section contains amongst other things the appreciations and opinions of eminent persons favouring the founding of an All-India Institute of Indian Architecture. We whole-heartedly endorse this project. The vital beauty of expression of Indian Architecture lies in the spiritual depth of mental vision reflected in it—which true lovers of Indian Culture should do their best again to present to the world through its proper medium.

It is to be hoped that this Monograph which, considering the excellence get up and plates, is very moderately priced, will receive the welcome it deserves from all architects, engineers and lovers of Indian Art.

SATIS CHANDRA SEAL.

JAINA SYSTEM OF EDUCATION by Dr. D. C. Dasgupta, M.A., Ed.D. (Calif.), published by Bhārati Mahāvidyālaya, 170, Maniktala Street, Calcutta. Pages xiv+134. Price. Bound Rs. 3|8|- (or Sh. 5|-), Unbound Rs. 3|- (or Sh. 4|6). 1943.

Here is a helpful book, written in a lucid style by an author thoroughly conversant with the technical knowledge of the subject. It is a pioneer work in the sense that it surveys the whole field of the Jaina System of Education from various view-points—historical, psychological, educational and other. The theme is approached from Jaina stand-point, although the Buddhist and Brahmanical sources relevant to the theme have been laid under contribution in these ten lectures. The treatment is both penetrating and judicious. The author has tried to establish that some of the features of the Western system of educational methods—such as co-education, psycho-analysis, intelligence test, vocational training etc.—were anticipated by the theorists of education in Jaina India. As might be expected of a pioneer work, it is more suggestive than exhaustive. We hope that the author will give us more of the fruits of his specialised research in other similar publications. We congratulate the author, the patron and the publisher on the production of this thoughtful and thought-stimulating book.

P. P. CHATTERJI.

PAÑCHĀLAS AND THEIR CAPITAL, AHICCHATRA by Dr. Bimala Churn Law, Memoirs of the A. S. I. No. 67. Price Rs. 2|4|- or 3s. 9d.

Dr. B. C. Law has once more placed students of Indian archaeology under an obligation by this succinct and valuable account of the Pañchālas and their capital. All the available evidences, literary, epigraphical and numismatic, have been presented in this memoir with his critical comments that do full justice to the different views put forward from time to time by different scholars, and Dr. Law's judgement on the matters passed in review is marked by the moderation and soundness that we expect in any work done by him; we would commend particularly his restrained discussion of the numismatic evidence of the 'mitra' coins. There is a very good map of the Pañchāla country.

K. A. NILAKANTA SASTRI.

IMPORTANT CONTRIBUTIONS TO ORIENTAL JOURNALS

Annals of Oriental Research (University of Madras), Vol. V, Part 2, 1941.

Place-name suffixes in Tamil by R. P. Sethu Pillai.

A Note on the word 'Tēvu' by V. Venkata Rajulu Reddiar.—"The verb is written as *tevu* in the available editions of *Tolkappiyam*. But the correct form seems to be 'tēvu'." In Tamil.

Dravidian Phonetics by K. Ramakrishnaiya.—Author has discussed various phenomena such as the softening and palatalisation of consonants, metathesis, anaptyxis etc. in Telugu.

Grantha Samskaramu (in Telugu) by Sripada Lakshmipathi Sastri.—Method of text-editing with illustration from the *Kumārasambhava*.

Turning Points of Kannaḍa Literature by M. Mariappa Bhat.

Prābhākara's Criticism of Dhvani by P. Krishnan Nair.—A refutation of the criticisms of Prābhākara on the theory of Dhvani. In Malayalam.

Sarvānukramaṇī-padya-vivṛtti, A New Commentary on the Ṛgveda-nukramaṇī of Kātyāyana by C. Kunhan Raja.—Short extracts out of this hitherto unknown metrical commentary.

Niruktavārttika (a rare work till now undiscovered) by C. Kunhan Raja.—Author has tried to show that this lost work should have been known to Durga.

Studies on Kālidāsa by C. Kunhan Raja.—In the first study the author makes the very bold suggestion that the original Raghuvamśa "must have stopped with the first eight Cantos and the entire Rāmāyaṇa portion must have been the addition of a later hand". In the second he has tried "to find out how far the mind of the poet was saturated with the story of the Kumārasambhava when he was writing the Raghuvamśa."

Notes on some Ancient South Indian Political Geographical Names by V. Raghavan.—Author has discussed the names *Preharā*, *Aśmaka*, *Pallava*, *Dramila* and *Sivi*.

Tattvasuddhi edited by S. S. Suryanarayana Sastri and S. P. Radhakrishnan.—Final instalment.

Ibid., Vol. VI, Part 1, 1942.

Change of Consonants by V. Venkata Rajulu Reddiar.—Author has discussed Sandhi-changes in Tamil. In Tamil.

Dravidian Phonetics by K. Ramakrishnaiya.—Author has discussed the development of *l* in Dravidian languages.

Āṇḍayya by M. Mariappa Bhat.—Author has critically examined the Kannaḍa poet Āṇḍayya's work "Kabbigara Kāva." In Kannada.

Death of Odēnan by Chelvat Achyuta Menon.—Malayalam text of the ballad of same name.

Dhvaṇyāloka (in Malayalam) by P. Krishnan Nayar.—Author has tried to prove that *both* the *Kārikā* and the *Vṛtti* of Dhv. are by Anandavardhana. Notes on *Kālidāsa* by C. Kunhan Raja.—In the *Bhartavākya* of the *Māla-vikāgnimitra* the author finds “a very weighty evidence for the date of *Kālidāsa* as contemporaneous with the King *Agnimitra*.” In the second note an attempt has been made to find allusions to *Agnimitra* in K.’s works. In the third note the author says in justification of his theory about *Raghuvamśa* that the poet’s intention was to describe only the *origin* of *Raghu*’s dynasty.

Some *Appaya Dikṣitas* by V. Raghavan.

Minor Works Wrongly Ascribed to *Ādi Śaṅkara* by V. Raghavan.—Author discusses *Sarvavedāntasiddhāntasārasaṅgraha* and *Prabodhasudhākara*.

Tuḥfat-al-Mujāhidin, an Historical Work in the Arabic Language, translated into English, by S. Muhammad Husayn Nainar.—Author has rendered a great service by retrieving from oblivion this important work dealing with the history and geography of south-western India in the medieval age.

Anthropos, Vol. XXXV-VI, 1940-41, Parts 1-3.

Bhagwān, the supreme deity of the *Bhils* by W. Koppers.—Ethnological study.

Bhāratiya Vidyā Vol. III, Part II, May 1942.

Bhāratiya Vidyā by Sarvapalli Radhakrishnan.—A popular address.

The Golden Age of the Imperial Guptas by K. M. Munshi.

Date of *Meghavijayagani*’s Commentary on the *Hastasañjīvana*—between A.D. 1680 and 1700 by P. K. Gode.

Sūktabhāṣa and *Havirbhāṣa* by H. G. Narahari.—Examination of this principle of classifying the gods.

Indus Civilization by A. D. Pusalker.—Contd. from *Bhāratiya Vidyā* Vol. III, Part I.

Pre-Mahābhārata Solar Dynasty by D. R. Mankad.—In this paper the author has discussed and reconstructed “the pre-Mahābhārata Solar Dynasty as it stood in the days of the Mahābhārata war.”

The City of ‘*Alakā*’ in *Meghadūta* by S. N. Vyas.—Author concludes “that the modern *Suvarṇa-giri* can justly be identified with the old *Alakā*.”

The Book in India by K. M. Munshi.—A popular address on writing, printing, etc.

Maheśvarasūri’s *Jñānapañcamikathā* by A. S. Gopani.—A preliminary notice about the text which the writer is editing.

Two Linguistic Notes by Harivallabh Bhayani.—Author has discussed some *Gujarātī* reduplicatives and *Gujarātī* representatives of the Sanskrit secondary formations in *-rūpa*.

Bharadvāja’s Hymns to *Agni* by Manilal Patel.—Critical translation of RV. VI. 13-16.

Brahmavidyā—the Adyar Library Bulletin, Vol. VI., Part 1.

Four Documents relating to the Kālahasti Temple by K. A. Nilakanta Sastri and M. Venkataramayya.

The Works of Vādi Vāgīśvara by V. Raghavan.

Serial Publications :—

Jivānandanam of Ānandarāya Makhin edited by G. Srinivasa Murthi and M. Duraiswami Aiyangar.

Saṅgītaratnākaraḥ with the commentaries of Catura Kallinātha and Śimhabhūpāla edited by S. Subrahmanya Sastri.

Śrīpāñcarātrarakṣā of Śrī Vedāntadeśika edited by M. Duraiswami Aiyangar and T. Venuḡopalacharya.

The Nyāyakusumāñjali of Udayanācārya translated by Swami Ravi Tirtha.

The Apastambasmṛti edited by A. N. Krishna Aiyangar.

Ālambanaparikṣā and Vṛtti by Diṇṇāga, with the Commentary of Dharmapāla edited by N. Aiyaswami Sastri.

"The Acyutarāyābhyaśya of Rājanātha Diṇḍima edited by A. N. Krishna Aiyangar.

Bulletin of the School of Oriental and African Studies, University of London, Vol. X, Part 4.

Hvatanica IV by H. W. Bailey.—Selected Khotanese Buddhist texts with English translation.

Indo-Iranica by J. Duchesne-Guillemin.—Author has discussed Old Persian "a-sa-a da-a-ru-u-va", Avestan *xšnaui-*, Skt. *vārpaś* : *rūpā*, Avestan *raē θ-* and *nakaθwa-*.

Recherches sur l'étymologie des deux dialectes tokhariens by A. J. van Windekens.—The etymology of only a few Tokharian words has been discussed.

Mani's Last Journey by W. Henning.—Based on fragments of Manichaean texts (published here for the first time) in Middle Persian.

Tibetan *dan*, *cin*, *kyin*, and *ham* by Walter Simon.—An overlooked Type of Inference by Arnold Kunst.—Author has expended much ingenuity on propositions with the copula *kimpunar*.

The Vulgar Pronunciation of Tamil by G. Matthews.

Epigraphia Indica, Vol. XXVI, Parts III—V.

Tumain Inscription of Kumāragupta and Ghaṭotkachagupta (G. E. 116) by M. B. Garde.—This inscription clearly shows that Ghaṭotkachagupta was a member of the Imperial Gupta family, though it is not clear whether he was the son or a younger brother of Kumāragupta.

Two Yūpa Inscriptions from Barnala : Kṛta years 284 and 335 by A. S. Altekar.—The first commemorates the performance of the seven Soma-sacrifices if editor's emendation *saptakam* is accepted; the second commemorates the performance of Garga-trirātra (Śān. Śr. XVI. 21).

Gurzala Brahmi Inscription by K. A. Nilakanta Sastri.—This Prākṛit inscription of the third century A.D. records the gift of a field to Bhagavān, the Lord of Halarāpūra, by Noduka-siri in the fourth regnal year of Mahārāja Siri-Rulupurisadāta.

Parasuramesvara Temple Inscriptions by A. Ghosh.—Of these five short inscriptions of the Paraśurāmeśvara Temple at Bhuvaneswar the principal one, palaeographically of the eighth century, records the daily offering of an *āḍhaka* of rice to the lord Pārāśeśvara.

An Inscription of Jaitugi, Saka 1188, by H. D. Sankalia and S. C. Upadhyaya.—The main object is to record gift of land to a Brāhmaṇa Vaidēva, a Jyotiṣi, in the reign of Jaitugi.

Bihar Kotra Inscription of Naravarman's Time [Mālava year 474] by S. N. Chakravarti.—It records the digging of a reservoir in the name of the Bhikṣusaṅgha of the four quarters. King Naravarman of this Inscription was a predecessor of the great Yaśodharman, the conqueror of Mihirakula.

Dhavalapeta Plates of Maharaja Umavarman by R. K. Ghoshal.—This Inscription of the first half of the fifth century A.D. records the gift of a village to the Brāhmaṇa Khallasvāmin of the Vatsa Gotra and Chandoga Śākhā.

Spuriousness of the Nalanda Plate of Samudragupta by Dines Chandra Sircar.

Basim Plates of Vakataka Vindhyaśakti II by V. V. Mirashi and D. B. Mahajan.—From this, the earliest copper-plate grant of the Vākāṭakas, the editors, *inter alia*, have drawn the conclusion that the Vākāṭakas had their original home in the South and not in Central India.

Kothuraka Grant of Pravarasena II by V. V. Mirashi.—Of fundamental importance for Vākāṭaka history.

A Note on the Dates of three Rashtrakuta Kings by A. S. Ramanatha Ayyar.—The three Kings are Indra III, Govinda IV and Kṛṣṇa III.

Indian Museum Plates of Ganga Indravarman by C. C. Das Gupta.

A Buddhist Tract (dhāraṇī) in a Stone Inscription in the Cuttack Museum by A. Ghosh.—Perhaps it was thrown into a Caitya in course of construction for the attainment of religious merit.

Takkali Plates of Anantavarman : Ganga Year 358 by R. K. Ghoshal.

Dongargaon Inscription of the Time of Jagaddeva : Saka 1034 by V. V. Mirashi.—Important for Paramāra history.

Six Saindhava Copper-plate Grants from Ghumli by A. S. Altekar.—Of fundamental importance for the history of Kathiawad.

A Note on the Date of the Somavamsi Kings of Southern Kosala by V. V. Mirashi.—Against A. Ghosh author maintains that the Somavamsi Kings flourished in Chhatīgarh in the sixth and seventh centuries A.D.

Nalanda Seal of Vishnugupta by Krishna Deva.—Comparing the Gupta genealogy of the Mañjuśrīmūlakalpa with that of the seals author has established, *inter alia*, the identity of Pūrugupta with Skandagupta.

The Indian Geographical Journal, Vol. XVI, No. 4.

Geographic Basis of the Legendary Origin of Kerala by George Kuriyan.

Geography and Culture by Maneck B. Pithawalla.

The Indian Historical Quarterly, Vol. XVII, No. 4 and Vol. XVIII, No. 1.

The Dramas ascribed to Bhāsa by S. K. De.—Author has shown "that all these plays are more or less faulty, and are not as they are often represented to be." Nor is it certain that they were written by the real Bhāsa ; but they are certainly forceful and unlaboured.

Origins of the Rajput War (1679-81) by Yashpal.

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